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Raising the Bar in Radio Communications

The City of Hialeah, Florida
Request for Proposal (RFP)

P25 Public Safety Radio System

RFP # 2014-15-2000-00-001

October 8, 2014

ADVERTISEMENT
and
REQUEST FOR PROPOSAL

Sealed submittals in response to this Request for Proposal ("RFP" or "Solicitation") for an APCO P25-compliant, new 800 MHz digital linear simulcast trunked public safety radio system will only be received by the City Clerk of the City of Hialeah, in the Office of the City Clerk on the 3rd Floor of City Hall (located at 501 Palm Avenue, Hialeah, Florida 33010), until **2:00 p.m., Friday, November 7, 2014**, at which time the submittals will be opened by the City Clerk in the 3rd Floor Council Chambers at City Hall, when the Proposers' names will be announced and the Bids will be delivered to the Telecommunications Division for review and handling. There will be a **mandatory Pre-Proposal Conference.** Each Proposer should bring a copy of this Solicitation to the conference because additional copies of this Solicitation will not be available. The deadline for submitting written questions, comments, and requests for clarification concerning this Solicitation shall be **2:00 p.m.** on **Friday, November 7, 2014**.

P25 DIGITAL PUBLIC SAFETY RADIO SYSTEM
RFP NO. 2014-15-2000-00-001

Affidavits, forms and the text of the Request for Proposal may be obtained at the Purchasing Division Office, City of Hialeah, City Hall, 501 Palm Avenue, 4th Floor, Hialeah, Florida.

Each Proposal Response shall be submitted in two (2) sealed envelopes. One sealed envelope shall contain the "Technical Response" and the other sealed envelope shall contain the "Infrastructure Pricing and User Equipment Pricing Response". The outside of each sealed envelope must clearly indicate the name and number of this RFP (P25 Digital Public Safety Radio System; RFP No. 2014-15-2000-00-001); the Proposer's name and address; and the Proposal due date and time. Each envelope shall be clearly marked as either the "Technical Response" package or the "Infrastructure Pricing and User Equipment Pricing Response" package. The two sealed envelopes may be placed in one package for delivery to the City, but the outside package must clearly indicate the name and number of this RFP, the Proposer's name and address and the Proposal due date and time.

A Proposal Response may be withdrawn prior to the deadline for submitting Proposals to the City under this RFP. Any Proposal Response that is not withdrawn at the time shall constitute an irrevocable offer to provide the services requested herein. The offer shall remain in effect for a period of one hundred twenty (120) days after the deadline for submitting the Proposal Response.

The City reserves the right to: reject any or all Proposals, with or without cause; waive minor irregularities with regard to the RFP requirements and the Responses received; and award the City's contract to the Proposer that deemed to be qualified, responsible, responsive, and providing the best overall value to the City.

CITY OF HIALEAH, FLORIDA

Advertisement Date:
October 9, 2014

Angel Ayala, Acting Purchasing Director

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1.0 General Proposal Submittal Provisions

1.1 Purpose

This RFP Specification encompasses a turnkey project to provide the City of Hialeah, Florida with an APCO Project 25 (P25) compliant new 800MHz digital linear simulcast trunked radio network capable of meeting current and future communication needs, operationally, functionally and reliably. City public safety agencies, as well as some the City of Hialeah governmental departments, are currently utilizing a Motorola SmartNet analog trunked technology that is outdated, limited in capacity, and which no longer meets the communication objectives of the City. It is expected that significant and tangible improvements to local-area 800MHz operations as well as wide area interoperability can be achieved, minimally, through the application of Project 25 technologies.

A key desire of the City of Hialeah is to transition away from proprietary solutions and to embrace new, emerging radio technologies that are in full compliance with industry recognized open standards. A second, critically important aspect of this communications network procurement is infrastructure reliability and hardening in response to heightened terrorism activities, and to regional natural and environmental hazards such as tropical storms, flooding, and hurricanes.

The City of Hialeah's Public Safety Radio Manager recognizes that the most important aspect of any public safety radio network is coverage reliability coupled with clearly understood audio quality delivered to users throughout their various working environments. Proposers need to have adequate flexibility in these Specifications, such that proposed solutions can be technically optimized to meet user desires and coverage expectation. The radio manager likewise appreciates the City's need to leverage previous investments in the system's infrastructure to the greatest extent possible by reusing existing radio communication facilities. Therefore, this RFP requires Hialeah's three existing towers/sites to be reused for design of the new P25 radio system. The construction of an additional fourth site, explained in detail later in this Proposal, will be required to meet the required coverage specified herein.

Interoperability between the City of Hialeah's first responders and other adjacent municipal/county agencies occurs on a daily basis and is another area of concern that is addressed by these Specifications. Interoperable communications must, at a minimum, meet current capabilities, but should consider all of the City's desired interests.

The City of Hialeah is also aware that the voluntary development and user adoption of APCO Project 25 open-standards has been a laboriously slow one. APCO Project 25 standards development commenced nearly twenty years ago and has only recently achieved the ratification of switch interconnectivity standards for networks. It is recognized that final development of narrowband P25 Phase-II 6.25KHz specifications is nearing completion. Fortunately, the federal government's desire for all military and federal agency radio networks to transition to P25 narrowband technologies has fueled both the standards completion process and has accelerated development of complex network infrastructures, inclusive of simulcast technology, by the radio vendor community.

This Specification addresses those functional, operational, and technical requirements, as well as user expectations for reliability, redundancy and capability for Hialeah's envisioned new Project 25 digital radio communications network - at a fair and appropriate cost.

1.2 Instructions

This Specification is a complete document and must be returned intact with any addenda released subsequent to the issuance of this Specification package. In addition, Appendices E through I and Appendices K through N must be completed and returned. All responses and attachments should be placed into the RFP Response immediately behind the page on which the information was requested, in the form of a point-by-point response. Supplementary material may not be substituted for direct responses to questions.

If supplementary materials are inserted, each inserted page must be labeled in the bottom margin with the number of the Specification page behind which it is being placed. If more than one page is inserted behind a particular Specification page, then each must be labeled with the appropriate page number plus a letter designator, e.g. 121a, 121b, 121c, etc.

1.2.1 Procurement Process

The City of Hialeah has determined that the procurement of a high technology 800MHz trunked radio network shall be accomplished by response to these Specifications rather than through the receipt of unsolicited proposals. Responses in the form of an unsolicited proposal or of a type that offer technology solutions other than those resulting in a Project 25 Phase I compliant linear simulcast network will be rejected without further consideration.

Proposer Responses must be adequate to cover all expenses related to compliance with all applicable requirements of this Specification. Any related costs, direct or indirect, must be clearly identified in the Proposal Response. All costs related to the preparation or submittal of the response to this Specification are the responsibility of the Proposer.

1.2.2 The RFP Process

The following subsections outline the processes by which this Request for Proposal will be handled.

1.2.2.1 Notice of Request for Proposal and Proposal Release

REQUEST FOR PROPOSAL

PROPOSAL NUMBER: 2014-15-2000-00-001

PROPOSAL TITLE: P-25 PUBLIC SAFETY RADIO SYSTEM

Proposals will be received by the City Clerk at the Office of the City Clerk ("City") until **2:00 p.m. (E.S.T.) on November 7, 2014** at which time properly received proposals will be announced

in the Council Chambers, located on the 3rd floor of City Hall, **501 PALM AVENUE, 3rd Floor, HIALEAH, FL 33010** for the evaluation, election, and contract award in the manner set forth in this Solicitation.

PROPOSAL TIMELINE

Release of Request for Proposal	October 8, 2014
Mandatory Pre-Proposal Conference/Site Visits	October 16, 2014
Deadline for Submission of Questions	October 23, 2014
Answers Provided Through Addendum No Later Than	October 30, 2014
Proposal Due Date	November 7, 2014

All Proposals must be submitted in accordance with this Request for Proposals Number 2014-15-2000-00-001. Copies of proposals received may be obtained as governed by the Public Records laws, Ch. 119.07, Fla. Stat., which provides that the documents are public upon notice of a decision or intended decision to award the contract or within thirty (30) days after opening, whichever is earlier. All parts of the Proposal, including exhibits, are subject to the Public Records laws unless specifically exempted from disclosure under Florida law.

The Proposal will be publicly advertised and released in accordance with applicable City of Hialeah procurement policy and State of Florida laws. Additionally, these Specifications may be directly provided to those businesses that are known to be a potential offeror of goods or services of the type required.

1.2.2.1(a) REJECTION OF IRREGULAR PROPOSALS

Subject to the exercise of the City's sole discretion to waive minor irregularities, proposals will be considered irregular and may be rejected if they show omissions, alterations of form, additions not called for, conditions, limitations, unauthorized alternate bids or other irregularities of any kind. The City reserves the right to waive minor irregularities that will not result in an unfair economic or competitive advantage or disadvantage to any Respondent in its sole discretion. The Mandatory Pre-Proposal Conference may be waived only for good cause as determined by the City.

Furthermore, in its sole and absolute discretion, the City may reject any or all Proposals, re-advertise this RFP, or postpone or cancel this RFP process at any time. The City shall have the sole and absolute discretion to determine the criteria and processes by which Proposals are evaluated, the manner and extent to which the City will investigate a Proposer's qualifications, whether a Proposer is qualified, whether a Proposer is responsive to this RFP, whether a Proposer will be awarded the Contract, and whether any award will be made as a result of this RFP. In no event will any successful challenger of these determinations or decisions be automatically entitled to an award of the Contract.

1.2.2.2 Pre-Proposal Conferences

The City of Hialeah and its Consultant will hold one Mandatory Pre-Proposal Conference with potential Proposers concerning the requirements. This Conference will be held at the City of

Hialeah Fire Administration Building at a date and time to be determined. Any verbal agreements or representations made at this Conference or at any other time during the Proposal period will not be binding on the City of Hialeah. Official statements concerning the Proposal will be issued in writing as an RFP Specification Addenda.

1.2.2.3 Proposal Questions, Cone of Silence

If during the review or preparation of the Proposal submittal, a Proposer discovers any errors, omissions or ambiguities, they should submit, in writing, their questions to the Hialeah Purchasing Division. Written questions that are submitted at least 48-hours in advance of the Pre-Proposal Conference will be addressed during the Conference. Written questions submitted after this time period to the City of Hialeah Purchasing Division will be forwarded to the Consultant and if received by the Consultant at least seven days prior to the Proposal Submission Date, will be addressed in a written addendum.

Direct contact with any City of Hialeah Public Safety or Local Government personnel concerning this Proposal will result in Contractor disqualification for this RFP process (Cone of Silence). All contact regarding this Specification or the RFP process must be accomplished as identified in Section 1.9.

1.2.2.4 Late Proposal Submission

Any Proposal Response submitted after the specified submission due date and time, as publicly advertised, will not be accepted and will be returned unopened to the submitting organization. Any Proposal Response may be withdrawn by the Proposer prior to the scheduled Proposal Submission Date.

1.2.2.5 Proposal Submittal

All copies of the Proposal, in the indicated quantities and including all requested materials, should be provided to the address listed below by the date specified in Proposal Advertisement or as may be amended by addendum:

City of Hialeah
Office of the City Clerk
501 Palm Avenue, 3rd Floor
Hialeah, Florida 33010

Proposal Response Submittals shall be valid for a period of one hundred and twenty days (120) days after Proposal Submission Date.

1.2.2.6 Proposer Qualifications

The City of Hialeah reserves the right to discontinue consideration of a Proposer's Submittal if information requested on the Proposer's ability to perform is not submitted or is otherwise unacceptable. The City of Hialeah may, at any time prior to Contract Award, request proposal

clarification information submitted on other similar systems or the specific hardware/software solution. Proposers shall not be allowed to enhance, add/remove services or otherwise alter their Proposal Submittal configuration beyond that described in their initial Proposal Response.

The City of Hialeah may schedule question and answer sessions with qualified Proposers concerning their submission during the proposal evaluation process. These discussions will not be graded, and are solely to assist the Evaluation Committee members in their understanding of the proposal submitted. These meetings will be open to the public in accordance with the requirements of the Florida Sunshine Law. During these discussions, clarifications or minor corrections to Proposal Submittals, with the exception of price changes, may be considered.

Proposer(s) may be disqualified if there is reason to believe that: some form of collusion exists between Proposers; the Proposer is involved in litigation with the City of Hialeah; or if the Proposer is not performing on another contract of similar scope or has previously defaulted on another city/county contract, within the last five years.

Exceptions taken on any part of the stated functional or operational requirements, particularly those that directly relate to coverage reliability and delivered audio quality, may disqualify the Proposer.

1.2.2.7 Recommendation

After all qualified Proposals have been evaluated by the Consultant as to responsiveness, the Consultant will provide to the Evaluation Committee for the City of Hialeah copies of all responsive proposals, as well as a list of those proposals recommended by Consultant to be rejected as unresponsive. The Evaluation Committee members will each review the proposals for their preliminary thoughts regarding evaluation under the criteria set forth in section 1.2.2.10. Thereafter, if determined to be helpful by the City, the Evaluation Committee will ask questions of each proposer at a Sunshine-noticed meeting, and will, following the meetings for clarification, confer in the Sunshine to reach a recommended decision.

1.2.2.8 Contract Award

Upon notification of Contract Award, the Contractor shall provide Performance and Payment Bonds and Proof of Insurance as set forth herein. Failure to provide the required bonds or proof of insurance and all required Contractor documents within ten (10) days after notification of Contract Award shall entitle the City of Hialeah to rescind the award and retain any Proposal security. If the City must re-advertise the project because of this failure to timely execute the Contract, the defaulting party shall not be eligible to submit a subsequent Proposal Response in the City's sole discretion.

The City of Hialeah shall authorize award of the Contract to the most qualified, responsible, responsive Proposer that is compliant with these Specifications. No Contract shall be binding on the City of Hialeah until it has been approved by the City's Legal Counsel and the City's Council, and executed by both responsible parties (The City of Hialeah and Contractor).

A Pre-Construction Conference will be held at which time all required Contractor documents must be submitted. Upon the City of Hialeah's approval of these documents, a Notice to Proceed will be issued to the Contractor.

1.2.2.9 Proposal Response

The Proposal Response shall be divided into three sections: Technical, Infrastructure Pricing and User Equipment Pricing. One (1) electronic (CD) copy of the Technical Response and one (1) electronic (CD) copy of the Infrastructure and Subscriber Equipment Pricing Responses are to be submitted. The Pricing Responses shall be separated from the Technical Response and independently sealed.

Seven (7) copies of the entire Response package must be submitted in a sealed container addressed to: City of Hialeah, Office of the City Clerk, 501 Palm Avenue, 3rd Floor, Hialeah, Florida 33010. **The following must be plainly marked on the outside of the package: RFP title, RFP number, Proposal due date and time, and Proposer's name and address.** Proposal Responses should be delivered by hand with receipt requested, or by certified or registered mail. Proposals received after the Proposal Submittal Due Date specified in the Solicitation will not be considered and no time extensions will be permitted.

Any confidential/proprietary information contained in the Proposal must be clearly marked as such and will be kept confidential, if exempt under Florida Public Records law, in the sole and final determination of the City's Legal Counsel. All Proposal Responses become property of the City of Hialeah. A cover letter transmitting the Proposal Response must accompany the package.

1.2.2.10 Proposal Evaluation and Selection by Consultant

The City plans to use a two-step process when evaluating Proposals. Technical and Pricing Proposals shall be evaluated separately using a weighted point system. Out of a maximum 100% Overall Project Score, 70% shall be allocated to Technical Proposal evaluation scores with 30% being allocated to system cost over the life of the system (initial cost + one year warranty plus additional 14 years of maintenance and operational costs (15 year warranty support).

Technical Proposals will first be evaluated to determine whether the Proposer is qualified, responsive and responsible. Pursuant to Section 2-811 of the City's Code, a responsive Proposer "means a person who has the capacity in all respects to fully perform the contract requirements and has the integrity and reliability that will ensure good faith performance." Under the City Code, a responsive Proposer "means a person who has submitted a bid or proposal that conforms in all material respects to the invitation to bid..." The City reserves its right to take all necessary steps it deems necessary to evaluate the Proposer's qualifications. Among other things, the City may make additional inquiries of the Proposer and any other person, request additional information, and/or contact other local governments that have entered into contracts with the Proposer. A Proposer that does not provide the information requested by the City may be disqualified from this Solicitation. If a Proposer is deemed unqualified (i.e. not responsible) or not responsive, their Pricing Proposals will not be opened and their Submittal shall not be considered.

A Proposal may be found to be non-responsive because, among other things, the Proposer failed to utilize or complete the required forms, failed to provide additional information requested by the City, provided incomplete, indefinite, or ambiguous responses, failed to comply with applicable deadlines, or provided improper or undated signatures. The City's grounds for rejecting Proposals include, but are not limited to, evidence of collusion among Proposers, a lack of experience, expertise, or other qualifications to perform the work required, a submission of more than one Proposal by any person under the same or different names, or the listing of a Proposer on Miami-Dade County's Debarred Contractor's List.

Proposals that are determined responsive and complete will be evaluated by the Consultant and submitted to the Evaluation Committee.

Technical Proposals will be graded in the following areas, *listed in relative order of importance*, with respect to the requirements as outlined in this RFP:

1. Performance, coverage, capability and versatility (30%).
2. Reliability, redundancy and warranty (15%).
3. Proposer qualifications, history of product support, RFP deviations (15%).
4. Interoperability (10%).
5. Quality of maintenance, response time, availability of service parts (10%).
6. Proposed Training (8%).
7. System installation and implementation planning (8%).
8. Organization, scope and detail of proposal (4%).

The scored results of this Technical Evaluation will be multiplied by 0.70, thereby yielding a weighted technical project-total score. The results of this portion of the Evaluation shall be submitted to the Hialeah Purchasing Division. The cost Proposals will comprise of 30% of the total Proposal score.

At the direction of the Evaluation Committee as to the suitability and acceptability of the Technical Evaluation Results, the Consultant, will next open and evaluate costs for each responsive Technical Proposal Submittal.

The Total Cost will be calculated by comparing the relative cost differences between responsive Cost Proposals and evaluating the Proposal costs by simple percentage on the total cost of procurement and annual operation. The combination will be determined at the sole discretion of the City.

The Proposer Submittal receiving the highest Overall Project Score shall be considered for the Contract Award, by the Evaluation Committee, subject to the City of Hialeah's Total Cost Analysis set forth below. Further, the City retains the right to reject all bids for any and all reasons, in the exercise of its sole discretion. In the case of a tied Overall Project Score, the Consultant shall recommend the Proposal Submittal having the highest Technical Proposal evaluation score.

1.2.2.11 Total Costs

The City of Hialeah reserves the right to evaluate total project price on the basis of initial cost and life cycle analyses. Any deviations by Proposers from the pricing requirements herein shall be approved in advance of Proposal Submittal by addendum or they will be construed as being non-conforming and the Proposal Submittal will not be given further consideration.

1.3 Definitions

Definitions as used herein:

(a) Proposer:
Any organization, company, vendor, or supplier responding to this specification

(b) Contractor:
The Proposer to whom a Contract is awarded

(c) Proposal, Response, Submittal:
Correspondence or material furnished by Proposers in response to this specification

(d) City of Hialeah, Hialeah or City:
System Owner/Client

(e) Tusa Consulting Services, TCS or Consultant:
City of Hialeah public safety radio consultant (Consultant)
9745 Faraway Farm Rd
Tallahassee, FL 32317
(850) 559-9199, Telephone
(888) 434-2914, Fax

1.4 Proposer Standards

The Proposer must have manufactured, delivered and installed several radio systems of equivalent technology (700/800MHz AMBE+2 digital voice linear simulcast transmit/receiver voted) having comparable size and scope. Proposer's referenced systems shall be described with enough information that the City of Hialeah or its Consultant can reasonably determine their project equivalency. **The Proposer shall prepare a summary report for a minimum of five of the installed and fully operational systems that best emulates that being proposed for Hialeah.** These reports should include a detailed summary of the system and its significant operational

features/components as well as a current customer contact including name, address, and phone number, title, department and system responsibility.

Radio spectrum allocations now occupied by commercial television broadcast interests within the 700MHz band have become available solely to public safety operations. Proposers will likewise be required to provide sufficient information necessary to support claims that both proposed infrastructures and user equipment will be functionally and operationally compatible with these new channels (764-767MHz and 773-776MHz, paired with 794-797MHz and 803-806MHz, respectively). **Failure to propose equipment capable of operations on this new spectrum shall be considered non-responsive and that Proposal Submittal shall be given no further consideration.**

A factory authorized service center that is fully staffed and trained to support the proposed infrastructure network, and all related subsystem equipment, must be located within 50 miles of the City of Hialeah and duly registered and licensed to conduct business within the State of Florida to be considered adequate to satisfy initial installation, implementation, optimization, warranty and ongoing maintenance needs. The Contractor and all subcontractors, if any, must be able to legally conduct business within the State of Florida.

The standards produced by the following nationally recognized organizations shall apply, as a minimum, to all equipment, installation methods and materials:

A. EIA/TIA–Electronic/Telecommunications Association
B. NEC - National Electric Code
C. NEMA - National Electrical Manufacturer's Association
D. IEEE - Institute of Electrical and Electronic Engineers, Inc.
E. FCC - Federal Communications Commission
F. FAA – Federal Aviation Administration
G. NFPA – National Fire Prevention Association
H. Building Codes for the City of Hialeah, Florida
I. OSHA - Occupational Safety and Health Administration
J. IBC – International Building Codes, Rev. 2009

1.5 Workmanship

The Contractor agrees that the Consultant and appropriate City of Hialeah personnel will be permitted to observe user equipment installation, network implementation and all optimization/testing phases.

All workmanship must conform to normal and accepted standards for the telecommunications industry and will be thoroughly examined by the City of Hialeah Representatives and its Consultant at various stages during project implementation and before final network acceptance. All fixed site equipment, including electronic communications infrastructure, dispatch consoles; alarm system consoles, network management consoles, electrical wiring, towers, antennas, mounts, etc. must be installed by or under the supervision of the Contractor.

The Contractor must completely remove and properly dispose of residue due to its work, return the site to a useable state and will be responsible for the cost of repairing all damage caused by the Contractor or its Sub-Contractors during network installation.

The City of Hialeah and its Consultant reserve the right to halt the installation process due to poor workmanship, housekeeping, scheduling, work interruptions, etc. Work halts that have resulted from poor workmanship or unsafe or unacceptable conditions shall not relieve the Contractor of their responsibility to conform to the installation time requirements as stated in this Specification.

1.6 Materials

All equipment, except with the expressed written permission of the City of Hialeah and its Consultant, must be new and unused, meet telecommunications industry standards, and, where applicable, be registered with and approved by the Federal Communications Commission. The City of Hialeah or its Consultant reserves the right to reject and require the return, at the Contractor's expense, of any and all components which are defective or fail to comply with this Specification. Such rejections and/or returns will neither validate nor invalidate the remainder of the Contract. Rejections of material for cause shall not provide an extension of time to the Contractor.

1.7 Sub-Contractors

It is required that a single Contractor have total turnkey responsibility for the project so as to assure a fully operational network. Therefore, any Proposer desiring to use Sub-Contractor(s) must include within their Proposal Response a list and description of the qualified Sub-Contractor(s). The City of Hialeah will require documentation and references, including a thorough background investigation, to ensure the qualification of a Sub-Contractor. Any Sub-Contractor or person that is determined by the City to be unqualified or unacceptable to perform their duties, may at the City's sole discretion, be barred from working on the project. The Sub-Contractor(s) cannot be changed after submission of the Proposal Response except with the written permission of the City of Hialeah. Changes in Sub-Contractors shall not provide an extension of time to the Contractor.

1.8 Site Visits

Proposers, before submitting a Proposal Response, may desire to visit selected public safety locations in order to familiarize themselves with conditions, which may affect the work. Hialeah, its designated local representative or the Consultant will coordinate access and escort to the various sites. If more than one visit to a site is requested and time allows, the City of Hialeah designee will make the necessary arrangements.

Proposers must indicate any special requirements, i.e., architectural, mechanical, electrical, civil or structural modifications, that their equipment may need at City-owned locations that are intended to be utilized.

The costs for these special requirements shall be disclosed in the Proposal Submittal as this is a turnkey project in which the costs to furnish and install the proposed network infrastructure are fixed to the Proposal amount.

1.9 Contact

All contact and inquiries or requests for clarifications concerning this RFP shall be submitted in writing by mail, facsimile or email to:

Angel Ayala, Acting Purchasing Director
City of Hialeah
Purchasing Division
501 Palm Avenue, 4th Floor
Hialeah, Florida 33010
Fax: (305) 883-5871
Email: aayala@hialeahfl.gov

The City will only respond to questions and suggestions submitted to the City in writing. The RFP title and number shall be identified in all correspondence. Be sure to include the page and paragraph number of the RFP for each question to ensure that questions are responded to correctly. No questions will be accepted verbally or after the deadline for submitting written questions. The City's official responses to questions/clarifications will be sent to all Proposers in the form of an addendum. It is the Proposer's sole responsibility to ensure the Proposer receives all addenda.

1.10 Notification

Proposers will be notified of Hialeah's selection via email to the contact identified in the RFP Submittals, and posting on the City of Hialeah website, or otherwise in accordance with the City of Hialeah's Purchasing Policy.

1.11 Installation

1.11.1 Project Time Frame for Completion

The Project's time frame for completion is not greater than eighteen months from the Notice to Proceed. The Project will not be deemed completed until a fully-compliant Project 25 simulcast infrastructure has been installed, all system functionality, audio quality and mandatory coverage testing has satisfactorily been completed to the reasonable satisfaction of the City of Hialeah and their Consultant, and a Certificate of Completion has been issued by the City.

1.11.2 Installation Delays

If, at any time after the Contract Award, the Contractor becomes aware of any problems that may result in a delay in completing installation and system acceptance, the Contractor must immediately notify the designated City of Hialeah Representative and the Consultant by email,

citing the cause, probable effect and potential time delay's duration with recommendations for alternative action. This paragraph does not relieve the Contractor of contractual responsibilities; however, failure to notify promptly will be a basis for determining the Contractor negligent of an otherwise excusable delay.

1.11.3 Installation Damage

The Contractor shall be responsible for the repair of any damage to City property caused by the Contractor or its Sub-Contractors during installation, implementation, optimization, maintenance, or de-installation of any equipment or services. Such repair or replacement will be, in the City's direction and sole discretion, performed by the Contractor or by a third party of the City's choosing.

1.12 Training

The City of Hialeah considers training to be of paramount importance. User and dispatcher training shall be completed on-site by the Contractor's personnel. Dispatcher training shall be more extensive than user training and will involve all designated regular and relief dispatchers employed by the City at the time of system operational testing.

The Contractor shall provide administrative training for two (2) Communication Network Managers. Software training shall be provided which will enable these personnel to perform functionality/feature changes to fixed site equipment and portables/mobiles, poll the network diagnostics, perform traffic and feature usage studies, etc. It is the desire of the City of Hialeah that such training is to commence within 30 days upon completion of contract negotiations and execution, and be completed prior to the Customer Design Review (CDR) meeting.

The Contractor shall provide comprehensive maintenance training in which City service/support personnel are qualified in the proper diagnostic, maintenance and repair service skills needed to quickly resolve P25 700/800MHz communications equipment malfunctions as well as microwave backhaul operational problems. The Contractor shall provide operational and full maintenance training for two (2) City radio maintenance personnel, either on site or at remote factory locations. This level of training will be essentially equivalent to the level of service training required by the Contractor for its proposed Maintenance Providers and at the completion of which the equivalent certificate demonstrating such skills shall be provided.

Additionally, the Contractor shall develop and train radio maintenance personnel in those aspects of maintenance necessary to ensure the highest availability and reliability of infrastructure and subscriber equipment resources. Preventive maintenance training shall encompass all elements of supplied infrastructure equipment, inclusive of standby generator equipment, battery plants, battery charging systems, tower light systems, site grounding systems, alarm systems and all other subsystems directly or indirectly related to infrastructure reliability and operations. All safety training shall also be provided.

The Contractor shall coordinate all training sessions with the City of Hialeah. All training must be approved by the City. Dispatch, user/operators, maintenance personnel and network manager follow-up training shall be provided and scheduled no more than ninety (90) days after network acceptance for the purpose of training reinforcement. All costs, direct or indirect, for the training of user, dispatcher, maintenance personnel, and communications network managers, such as meeting rooms, travel, lodging and transportation, must be included in the final proposed price.

1.13 Implementation Plan

The new network must be installed in a parallel implementation. That is, infrastructure equipment will be fully installed and operationally ready before the existing analog voice system can be decommissioned. The current trunked analog 800MHz system is the only Public Safety Voice communications system and must continue operate around the clock (i.e. twenty-four hours a day, seven days a week, 365 days a year) during installation of the new system. **No interruptions in service of any duration may be allowed without prior approval of the City of Hialeah or their designee in writing, citing the date of the interruption and the specific period of time allowed.** Therefore, fully duplicated voice radio systems will coexist for some period of time. The period of time of parallel installation will be used to perform testing of operational functionality of the entire network, dispatch consoles, mobiles, portables, network features, high capacity receiver-voting, and simulcast transmitter operations. After the new network has been tested on a subset of radio channels and later accepted, the Contractor must remove the existing decommissioned 800MHz system, mobile equipment, antenna system components, and power/control wiring. This equipment will be placed in a City designated facility for storage.

Since existing dispatch console equipment will potentially control the old system during the parallel phase, the Contractor is required to develop an Implementation Plan to accommodate both existing and proposed systems during the parallel and transitional periods of installation and implementation and to submit such Implementation Plan with this Proposal.

1.14 Manufacturer Support

Proposers shall provide a letter agreement from sub-system manufacturer(s) which guarantees manufacturer's support in the case of any conditions or problems which cannot be remedied by the Contractor or in case the Contractor defaults on its warranty and/or maintenance agreements at the same cost and under the same terms submitted by Proposer.

1.15 Parts Availability

The Proposer shall provide a written guarantee that all proprietary backbone components and repair parts shall be available for at least fifteen (15) years from the date of network acceptance. End user equipment (i.e. portables, mobile, etc.) repair parts shall be available for at least seven (7) years from the date of cessation of equipment manufacturer.

Proposers shall fully disclose the end-of-life status of each major equipment grouping proposed in response to this Specification. End-of-production dates should be provided for base stations, microwave radios, network controllers, power supplies, dispatch consoles, audio switches, simulcast optimization subsystems, and all models of user equipment. It is the intent, to the maximum extent possible, for the City of Hialeah to avoid the purchase of any network equipment that is nearing (within 36 months) the end of its production cycle.

1.16 Warranty of Network Performance

In submitting their Proposal Response, the Proposer acknowledges that it has carefully reviewed the functional REQUIREMENTS AND WARRANTS TO THE CITY OF HIALEAH THAT THE 800MHZ P25 RADIO NETWORK INSTALLED SHALL FUNCTION ACCORDING TO EQUIPMENT SPECIFICATIONS, INDUSTRY STANDARDS AND THE MINIMUM OPERATIVE CHARACTERISTICS SPECIFIED IN SECTIONS 4.0, 5.0 AND 6.0 OF THIS SPECIFICATION. No disclaimers to the contrary will be accepted.

THE CONTRACTOR IS FURTHER RESPONSIBLE FOR PROVIDING RADIO NETWORK COVERAGE AS SPECIFIED IN SECTION 7.0. All costs incurred in order to comply with the functional, operational and technical requirements of this Specification shall be the responsibility of the Contractor.

1.17 Remedies

Remedies shall be negotiated with the apparent most qualified, responsive and responsible Proposer, as part of contract negotiations.

1.18 Contracts

This Specification and the Proposer's Response will be an integral part of the Contract. **Any and all statements made in the Proposal Response will automatically become part of the final Contract for equipment and services unless rejected by the City. Inability to contractually guarantee any statement made in their Proposal Response on matters required to be submitted in the Proposal will result in Proposer disqualification.**

Omission in the Proposal Response of any equipment, services or provisions herein prescribed shall not be construed so as to relieve the Contractor of any responsibility or obligation necessary to the complete and satisfactory installation of any and all systems, equipment, and services specified. The network price and any optional prices quoted must include all equipment, service, features, materials, labor, etc. necessary to make all the features, services, and equipment, which are included, fully functional. **The Proposer agrees that the cost of additional equipment, materials, or labor necessary to meet these requirements, which was not otherwise calculated in his Proposal Response, shall be solely at the Contractor's expense.**

Each Proposal Response must be signed by a duly authorized officer who is empowered to contractually bind the Proposer.

The City of Hialeah shall enter into contract negotiations with the apparent most qualified, responsive and responsible Proposer. Should the City of Hialeah be unable to negotiate a Contract with the apparent responsive and best Proposer, the City may exercise the right to enter into Contract negotiations with the apparent responsive Proposer having the next-highest evaluation score.

1.19 Non-Appropriation of Funds

In the event no funds or insufficient funds are appropriated and budgeted by the City or are otherwise unavailable for fulfilling the requirements of the Contract, the obligations of the City of Hialeah shall terminate on the last day of the fiscal period for which appropriations are received, without penalty or expense to the City of any kind whatsoever. The City of Hialeah will immediately notify the Contractor or its assignee of such occurrence. In the event of such termination, the City of Hialeah agrees to peaceably surrender possession of the equipment to the Contractor or its assignee on the date of such termination to the extent that such equipment has not been paid for by the City. The Contractor will be responsible for packing all equipment and any freight charges.

The City of Hialeah will not cancel if any funds are appropriated to it, or by it, for the acquisition, retention or operation of the equipment or other equipment performing similar functions for the current fiscal period in which the termination occurs or the next succeeding fiscal period thereafter and that it will not, during the funding period, give priority to other functionally similar equipment or services. The Contractor shall covenant and agree to indemnify and hold the City of Hialeah harmless against any loss, damage liability, cost, penalty or expense, including attorney's fees, which it is not otherwise agreed to by the City of Hialeah in the equipment Contract and which is incurred and arises upon a failure of the City of Hialeah to appropriate funds in the manner described herein for a continuation of the Contract or exercise of the option to purchase the equipment.

1.20 Acceptance

Acceptance testing procedures shall be negotiated with the apparent qualified, responsible, and responsive Proposer as part of Contract negotiations.

The Contractor agrees that, upon network system acceptance, designated City of Hialeah maintenance personnel shall be provided with security and access codes, which will allow the City of Hialeah to make routine operational changes and conduct radio profile maintenance. The Contractor shall continuously notify the City of Hialeah of any computer and radio network software code revisions and any recommended equipment modifications. All such code revisions, upgrades and modifications shall be automatically incorporated into the project, through the commencement of acceptance testing up to the date of formal system acceptance and shall be provided to City as part of the proposed optional warranty support for years 2-5, 6-10 and 11-15.

1.21 Purchase Payment Schedule (Non-Negotiable) The following payment schedule shall apply:

10% - at Contract execution

25% - at delivery of system infrastructure components and inventory of same to the City of Hialeah designee

10% - upon infrastructure installation completion

25% - upon satisfactory completion of audio quality and range coverage testing

15% - upon issuance of subscriber equipment and satisfactory completion of all training

15% - upon Final System Acceptance

The Proposer agrees that all prices quoted in its Proposal Response are valid for one year from the Contract execution date. Future price discounts are valid for the time periods indicated in Section 16.

1.22 Right to Reject Proposals and to Award in the City's Best Interest

The City of Hialeah reserves the right to reject any and all Proposals received. Acceptance of any Proposer's Response for evaluation will not place the City of Hialeah under any obligation to accept either *the lowest priced or most technologically advanced* response.

1.23 Contractor's Insurance

The Contractor shall be responsible for any and all loss of material connected with the construction due to unexplained disappearance, theft or misappropriation of any kind or nature. The foregoing provisions shall not operate to relieve the Contractor and any Subcontractors of responsibility for loss or damage to their own or rented property or property of their employees of whatever kind or nature, including but not limited to tools, equipment, forms, scaffolding and temporary structures including their contents. The City of Hialeah shall in no event be liable for any loss or damage to any of the aforementioned items or any other property of Contractor and any Subcontractors. The Contractor and any Subcontractors hereby waive any right of recovery they may have against the City of Hialeah for damage or destruction of property of whatever kind or nature whether it is their own property or property of their employees.

The Contractor shall procure and maintain for the duration of the Contract the following insurance policies as mandated by and with minimum limits set by the City of Hialeah Risk Manager with coverage for occurrences and claims that may arise from or in connection with the performance of the obligations hereunder by the Contractor, its agents, employees, representatives and subcontractors:

1. A policy or policies to insure the Contractor for legal liability on account of personal injury (including death resulting wherefrom) or loss of or damage to property however arising in the execution of this Contract and specifically including explosion, collapse, and underground damage. The combined liability limits shall not be less than $1,000,000. This insurance shall include coverage for (a) Premises - Operations; (b) Broad Form Contractual Liability; (c) Products and Completed Operations; (d) Use of Contractors and Subcontractors; (e) Personal Injury; (f) Broad Form Property Damage. "Claims made" forms shall not be acceptable. The "occurrence form" shall not have a "sunset clause".

2. The policy or policies for this combined liability shall also include 'products/completed operations' liability for four years after completion of the work and acceptance by the City of Hialeah.

3. A policy to cover the full liability of the Contractor in accordance with the provisions of the Worker's Compensation Law of the State of Florida. The Contractor shall also maintain employer's liability coverage with limits of not less than $1,000,000 per year. The Contractor shall also obtain from its Workers' Compensation Insurance carrier a waiver of subrogation in favor of the City of Hialeah.

4. The Contractor will provide evidence of automobiles liability coverage for owned, non-owned and/or hired vehicles in limits not less than $1,000,000 combined single limit per occurrence for bodily injury and property damage.

The policies or certificates evidencing the coverage provided above shall be submitted at the Customer Design Review (CDR) meeting and prior to commencing any work or before the City's issuance of a formal Notice to Proceed. Such policies or certificates shall provide that insurance will not be materially altered or canceled without thirty (30) days prior written notice to the City of Hialeah.

1.23.1 Other Provisions

The insurance policies required by the Contract shall contain, or be endorsed to contain, the following provisions:

1. The City of Hialeah, its officers, agents, servants and employees, shall be added as "additional insureds" under the Comprehensive General Liability and Automobile Liability Coverages.

2. The Workers' Compensation and Employer's Liability coverage shall contain an express waiver of all rights of subrogation against the City of Hialeah, its officers, agents, servants, and employees, for losses arising from work performed by the Contractor for Hialeah.

3. All insurance policies required by this Contract shall be endorsed to state that coverage shall not be suspended, voided, canceled by either party, or reduced in coverage

or in limits except after thirty (30) days prior written notice by certified mail has been given to the City of Hialeah.

1.23.2 Acceptability of Insurers

All insurance required by this Section shall be placed with insurers that are authorized to do business in the State of Florida and have a rating of no less than A- in the most current edition of the A.M. Best Insurance Report. Insurers shall have a minimum financial size category of VIII according to A.M. Best.

1.23.3 Certificates of Insurance

The Contractor shall furnish to the City of Hialeah Certificates of Insurance affecting coverage required by this Contract. The certificates are to be signed by a Florida licensed agent authorized by that insurer to bind coverage on its behalf and endorsements. The certificates and endorsements must be received and approved by the City of Hialeah prior to the Contract's effective date.

1.24 Indemnity

Indemnity shall be negotiated with the apparent most qualified, responsive and responsible Proposer as part of Contract negotiations. Proposer shall be required to add the City of Hialeah to its insurance policy as an additional insured, and to indemnify the City of Hialeah for any claim arising out of its performance of the contract, including but not limited to attorney fees and costs up to and including the amount of this contract. The proposer agrees that .25% of the contract price is being paid by the City of Hialeah in exchange for this indemnity provision.

1.25 Performance and Payment Bonds

A Performance Bond in the amount of one hundred percent (100%) of the Contract Price shall be provided by the Contractor in the event the Proposer is awarded a contract. The Performance Bond shall be exercised by the City of Hialeah for failure of the Contractor to perform according to the terms of the Contract and this Specification.

A Payment Bond in the amount of one hundred percent (100%) of the Contract price shall be provided by the Contractor. The Payment Bond submitted must be from a surety company authorized to do business in Florida with a rating of A- or better in the most current edition of the A.M. Best Insurance Report. The Payment Bond must be countersigned by a Florida licensed agent authorized to represent the surety company writing the Payment Bond. That agent's power of attorney must be attached to the Payment Bond submitted.

The cost of these Performance and Payment Bonds are the responsibility of the Contractor.

Bonds shall be executed on statutory forms acceptable to the City of Hialeah. They shall be maintained in force through completion of the work and its acceptance by the City of Hialeah and the Consultant. They shall guarantee the Contractor's remedying any defects and damages due to faulty workmanship and/ or material for one year after the date of Final System Acceptance.

The Surety Company issuing bonds in connection with this project must be approved by the City and authorized to do business in the State of Florida. All bonds must be presented prior to Contract execution.

1.26 Code of Ethics

At no time will Proposers offer a commission or any other compensation to the Consultant or to the City of Hialeah or its employees in regard to the selection and purchase of this radio communications network.

1.27 Proposal Pricing Summary Sheets

Proposers shall provide detailed price breakdown submittals for infrastructure and subscriber equipment items, system integration/project management and installation/engineering services. Additionally, Proposers shall furnish a Proposal Summary Sheet for each of the two required Price Proposals. The entries on the Proposal Summary Sheets must agree with the same entries provided elsewhere in the Proposer's Response to these Specifications. In the event of any discrepancies, and not as a result of simple arithmetic of submitted prices, the lowest figure will prevail. Any errors or omissions in submitting pricing for the equipment or services shall be the responsibility of the Proposer.

1.28 Non-Collusion Affidavit

Specification compliance requires the non-collusion affidavit provided in Attachment H must be properly executed and notarized.

1.29 Brokerage Fee

The Contractor warrants that he has not employed any person to solicit or secure this Contract upon an agreement for a commission, percentage, brokerage or contingent fee. Breach of this warranty shall give the City of Hialeah the right to terminate the Contract, or, at the discretion of Hialeah, to deduct from the Contract price or consideration, the amount of such commission, percentage, brokerage or contingent fee. This warranty shall not apply to commissions payable by contractors upon contracts or established commercial or selling agencies maintained by the Contractor for the purpose of securing business. No elected official or employee of the City of Hialeah shall be permitted to share any part of this Contract or any benefit that may arise there from. Any contract made by the City of Hialeah in which such individual(s) shall be personally interested shall be void, and no payments shall be made by the City of Hialeah or any officers thereof.

1.30 Conflict of Interest

In the interest of ensuring that efforts of the Contractor do not conflict with the interests of the City of Hialeah, and in recognition of the Contractor's professional responsibility to Hialeah, the Contractor agrees to decline any offer of employment if its independent professional work on

behalf of the City is likely to be adversely affected by the acceptance of such employment. The initial determination of such a possibility rests with the Contractor. It is incumbent upon the Contractor to notify the City of Hialeah and provide full disclosure of the possible effects of such employment on the Contractor's independent, professional work on behalf of Hialeah. Final decision on any disputed offers of other employment for the Contractor shall rest with the City of Hialeah.

1.31 Corporate Resolution

Proposal Response submittals must contain a Corporate Resolution or Power of Attorney authorizing and identifying agents to sign their Proposal or other documents as required by this Specification, the City of Hialeah Purchasing Division or the State of Florida. This Corporate Resolution or Power of Attorney must be certified and notarized.

1.32 Bid Bond

Proposal Response submittals must contain a five percent (5%) bid guarantee to be submitted with their Proposals. The bid guarantee shall consist of a firm commitment such as a Bid Bond, certified check, or other negotiable instrument accompanying the proposal as assurance that the Proposer will, upon acceptance of his proposal, execute such services as required. Such bid security shall be held by the City of Hialeah until the earlier of the end of the proposal validity period, or award, or rejection of proposals, after which said securities will be returned to the unsuccessful Proposers.

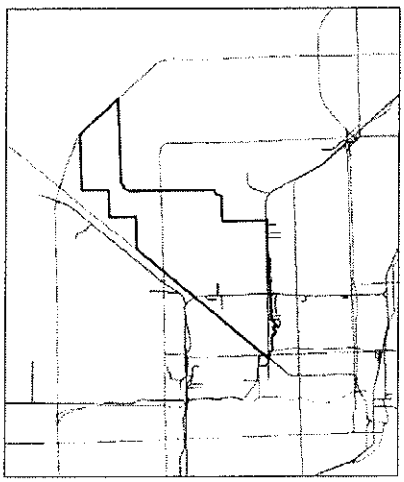
2.0 Existing Network Configuration

2.1 General

The City of Hialeah operates an enhanced E911 system and a 10 channel 800MHz trunked radio system, which was installed in 1998. This system supports the operational needs of the Police Department, Fire Department, Local Government employees and the Public Works department. In addition to the Statewide UHF MEDCOM system, local hospitals use dedicated talkgroups for transport support, hospital to hospital communications and flight following. For other cities with 800 MHz systems similar to Hialeah's, Hialeah will access their systems and use their dedicated talkgroups. For example, the City of Hialeah connects to Jackson Memorial through the City of Miami radio system and to Mt. Sinai through the Miami Beach radio system.

This system consists of multiple towers and shelters, containing base stations and repeaters located throughout the City. Dispatch for each agency is handled by the police/fire E911 dispatch center located at Fire Department headquarters. A backup dispatch center is located at Police Department headquarters.

Hialeah's agencies, both public safety and non-public safety, rarely experience issues with radio propagation coverage, but a particular area of concern is the recently annexed portion of the City in the northwest corner of Hialeah. The lack of sufficient radio coverage in this area could potentially inhibit disaster response especially as the annexed area grows and becomes more densely populated with buildings and citizens of Hialeah. At the request of radio system users, an additional triangular shaped piece of land just north of the newly annexed area was included in the coverage requirements of the conceptual design of a new radio system. This will ensure that users have mobile and portable in-building coverage in all locations that are regularly served by the City of Hialeah's first responders.



City of Hialeah City Limits

2.2 Active Agencies

Agency	Dispatch	System	Radio Assignment
Fire Department	FD/PD Dispatch	800 SmartNet	Rescue/Apparatus
Police Department	FD/PD Dispatch	800 SmartNet	Vehicle/Individual
Local Government	FD/PD Dispatch	800 SmartNet	Vehicle/Individual
Public Works	By Department	800 SmartNet	Vehicle/Individual

2.3 Existing Call Signs

The call signs of the existing 800MHz system are as follows:

WQMF519	854.0125	500 ERP	WPCT375	851.1625	147 ERP
	854.1375	500 ERP		851.2500	147 ERP
	856.1875	300 ERP		851.7875	147 ERP
	857.1125	300 ERP		852.1625	147 ERP
	859.0125	300 ERP		852.2000	147 ERP
				852.5875	147 ERP
WNKU500	854.3375	1000 ERP		852.8500	147 ERP
				853.3000	147 ERP
WPNW940	806.0125	33 ERP		853.3250	147 ERP
	806.5125	33 ERP		853.8250	147 ERP
	807.0125	33 ERP			
	807.5125	33 ERP			
	808.0125	33 ERP			

WQMF519
The first two channels of WQMF519 are currently used on standalone mixed mode repeaters, one assigned to the Police Department and the other is assigned to the Fire Department. Three of these channels will be available for use with the new P25 system.

WNKU500
This is a standalone conventional channel licensed to the Water and Sewers department. This channel is available to all departments in analog only mode. The repeater is currently configured in mixed mode.

WPNW940
The five frequencies on this license are used for mutual-aid communications.

WPCT375
These frequencies are currently being used in the SmartNet trunked system. These ten channels will also be available for use with the new P25 system.

The City of Hialeah performs in house maintenance for most radio issues, including preventative maintenance inspections, troubleshooting, writing radio templates, and radio programming, when required.

Repair of infrastructure components and subscriber units are handled by Motorola at the depot level.

2.4 The City of Hialeah Fire Department

The City of Hialeah Fire Department (FD) provides fire protection throughout the City of Hialeah. The Department has 263 employees that respond throughout the City from eight stations. The dispatch function of the Fire Department is provided by the City of Hialeah E911/Dispatch Center.

The Fire Department operates on the City's existing 800MHz trunked analog system. The Department functions with a fleet of approximately 35 mobile and 205 portable radios with two consoles and two dispatch positions within the main dispatch center. Each of the FD personnel has access to a portable radio and could potentially utilize the radio system at any given time. Portable radios are assigned to individuals and each vehicle is assigned a mobile radio.

Fire Alerting to all fire stations is provided by a Zetron 6/26 on a dedicated UHF T-Band narrowband channel controlled by CAD and dispatch consoles, as well as manual encoding.

2.5 The City of Hialeah Police Department

The City of Hialeah Police Department (PD) is responsible for responding to all within the City of Hialeah including the newly annexed area. The Department has approximately 355 sworn and 500 non-sworn personnel operating from Department headquarters.

The Police Department also operates on the City's existing 800MHz trunked analog system and owns a fleet of approximately 292 mobile and 325 portable radios with five consoles and five dispatch positions. All PD personnel are assigned a portable radio and could potentially utilize the radio system at any given time. Each vehicle is assigned a mobile radio.

The dispatch function of the Police Department is provided by the City of Hialeah E911/Dispatch Center.

2.6 The City of Hialeah E911/Dispatch Center

The City of Hialeah E911/Dispatch Center, located at the Fire Department Headquarters, receives and dispatches calls for all service agencies in the City of Hialeah. The old dispatch center, located at the Hialeah Police Department serves as a backup dispatch center.

2.7 Non-Public Safety Agencies

The non-public safety agencies for the City of Hialeah are Local Government and Public Works.

These agencies operate on the existing 800MHz system and operate a fleet of approximately 444 subscriber radio units. Both agencies will have to have contact with the Dispatch Center. Neither of these agencies needs to communicate with agencies outside of the City of Hialeah.

2.8 Existing Interoperability

Miami-Dade County and most of the cities surrounding Hialeah have some degree of interoperable capabilities through mutual-aid channels to support radio communications both daily and during regional disaster responses. Interoperable communications capabilities of the new system must meet or exceed the capabilities of the existing system, at a minimum. The City of Hialeah desires to have advanced interoperable radio communications with the following agencies to the greatest extent possible:

Within Miami-Dade County

City of Miami		
800MHz SmartNet II	Motorola	Keys and talkgroup information exchanged
City of Miami Beach		
800MHz SmartZone	Motorola	Keys and talkgroup information exchanged
Miami-Dade County		
800 MHz P25	Harris	System A - Public Safety - through dispatch
800 MHz P25	Wulfsberg	Helicopters through dispatch
800 MHz EDACS	Harris	Control station patch to Hialeah
UHF Analog/Conventional		Fire Rescue - through dispatch
UHF Analog/Conventional		Fire Rescue Helicopters
Miami Beach		
800 MHz SmartNet II	Motorola	Police/Fire
Miami Springs		
800 MHz P25	Harris	Miami-Dade County Systems A
Coral Gables		
800 MHz Provoice	Harris	Through mutual-aid only

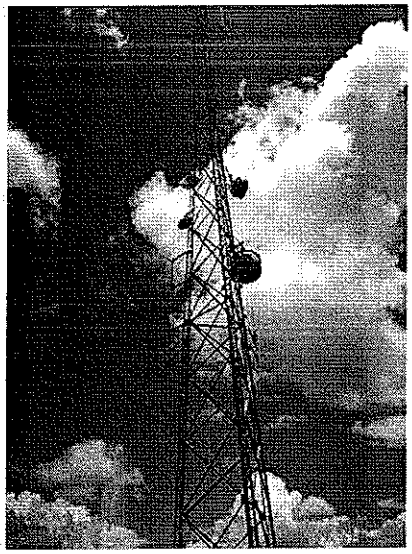
Outside of Miami-Dade County

Florida Highway Patrol		
800 MHz EDACS	Harris	Project 16 (Proprietary)
700 MHz P25	Harris	Airborne Platform
VHF Analog/Conventional		155.370 Intercity through dispatch

2.9 Existing Towers/ Sites

The City has the following locations that are required infrastructure sites for the new P25 800 MHz digital simulcast trunked radio network:

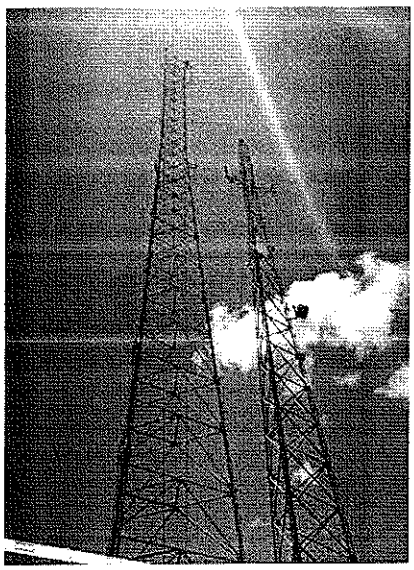
Site#1
Hialeah Fire Department
Lat: 25°49'36.90"N
Long: 80°16'48.54"
ASR#: 1056512
AGL: 200'
Site Elevation: 7'
Tower Type: SST
Build Date: 04/1998
TIA-222 Revision: F
Owner: City of Hialeah



Site #2
Hialeah Police Department
Lat: 25°52'19.97"N
Long: 80°15'55.43"W
Site Elevation: 7'

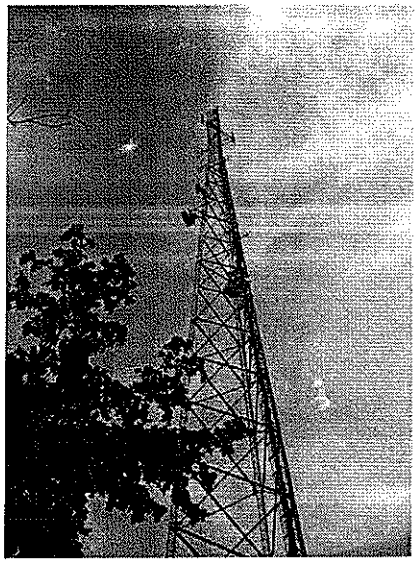
PiRod SST (Right)
ASR#: 1062720
AGL: 200'
Tower Type: SST
Build Date: 03/1999
TIA-222 Revision: F
Owner: City of Hialeah

ROHN SSMV (Left)
ASR#: 1056510
AGL: 200'
Tower Type: Self-Support
Build Date: 03/1999
TIA-222 Revision: F
Owner: City of Hialeah



Site #3

Bucky Dent Tower Site
Lat: 25°52'30.21"N
Long: 80°19'45.03"W
ASR#: 1056511
AGL: 200'
Site Elevation" 7'
Tower Type: SST
Build Date: 04/1998
TIA-222 Revision: F
Owner: City of Hialeah



3.0 Identified User Needs

3.1 General

The City of Hialeah, Florida has operated on a legacy 800MHz trunked conventional network supporting public safety users for over 16 years. The issues with this system are capacity, vendor support and parts availability, and radio propagation coverage. Propagation coverage is of particular importance in the northwest portion of the City in the newly annexed area. Substantial industry and residential growth is expected in this region over the next ten years. These capacity and coverage deficiencies must be resolved by the newly proposed 800 MHz P25 compliant radio network. As mentioned in Section 2.3 above, there will be thirteen 800MHz channels available for use with the new P25 radio system.

A full description of the network's current configuration is described by the Specification Document in Section 2. Proposers are strongly encouraged to thoroughly review that information and to conduct as many on-site inspections as necessary to gain a comprehensive understanding of existing network performance. It is critically important to the success of this digital P25 project that Proposers have a clear understanding of expectations and to propose a comprehensive set of equipment and services that fully satisfy and expand upon this network's baseline level of performance.

3.2 Public Safety Needs

3.2.1 Talk Paths

Each of the Public Safety agencies utilizes individual talk paths that are optimized for existing operations. Additionally these agencies share several channels that allow for some interoperability between agencies during special events and local-area emergencies. For the purpose of this RFP, Proposers shall develop new profiles, plus a nearly 100% future growth factor, in the development of their proposed solution.

3.2.2 Call Privacy

Hialeah's existing 800MHz analog radio network is intrinsically open to transmission monitoring with any radio equipment operable on those 800MHz frequencies (i.e., scanning receivers, etc.).

The ability to monitor is a required component. Dispatchers, in addition to their normal dispatch function can also monitor unit-to-unit traffic. This ability to monitor allows the dispatcher to develop a mental picture of ongoing operations. In times of emergency, where public safety personnel may need outside assistance, the dispatcher often has heard and remembered information critical to personnel safety that would otherwise have been unavailable.

Likewise, field users can hear on-frequency traffic and modify their use of the radio as conditions dictate. As an example, when emergency calls are in progress, channel protocol would require users to refrain from lower-priority transmissions. Competition for air-time may increase, but users

moderate calls, both in frequency and duration, in response to simply hearing more channel activity. In such a situation, the ability to monitor is desirable.

In the present analog trunked 800MHz radio system, it is impossible to control who monitors calls outside of the network. Command and investigative conversations may involve topics of a legally restricted or sensitive nature where eavesdropping by outside, unidentified persons is undesirable or unacceptable.

Accordingly, the new digital voice radio network shall include provisions for call privacy in which identified users within the network can be excluded from certain talk groups or individual conversations. This provision must offer sufficient flexibility such that the desirable features of monitoring can be retained while permitting privacy to conversations that are potentially confidential.

Finally, the new network shall incorporate technical features that prevent unauthorized listeners from monitoring any network calls. Ideally, the new network should inhibit the ability of non-network users from monitoring actual voice transmissions of any type as well as preventing such persons from monitoring those call assignments transacted via the network's digital control channel.

Proposers shall describe the scope and operation of such provisions inherent within their proposed solution that prevent the types of undesired radio monitoring discussed above.

3.2.3 Encryption

Digital voice 256-bit AES encryption, using Advanced Multi-band Excited +2 (AMBE+2) vocoder technology coupled with federally approved digital encryption schemes, **shall be proposed as an option for the new network.** Use of encryption needs to be on as needed basis.

Two modes of encrypted digital voice operation are desired:

1. Unit-to-unit, where conversations in an encrypted talk group are secure. These cannot be monitored at a dispatch or control point.

2. Dispatcher-to-unit, where conversations between the City's E911 Center, future Backup 911 Center and field units are secure.

The new network shall provide encrypted transmission so that system access delays are equal to those in the clear mode. Encrypted transmissions shall not degrade the operation of clear-voice features nor lengthen system access or audio transport delays to other users. Encryption shall not degrade the range or coverage less than normal digital performance.

3.2.4 End User Equipment

It is the City's intention to purchase a fully P25 800MHz network. Proposers shall demonstrate such P25 compliancy by listing, at a minimum, three different manufacturer's radios work on the P25 system. These approved radios will then be made available to the different services.

Police communications needs have generally shifted from patrol car based, with equipment fixed within vehicles to patrolman based where portable equipment is assigned to individual officers. These same user trends exist within the Fire Department and related public safety agencies.

This migration to portable units, with their reduced output power and often-degraded antenna performance, has placed greater technical demands on radio communications network infrastructures. The coverage needs for mobile-based systems are relatively straightforward as the available effective radiated power from a mobile unit can closely approach that of a base station. Talk-in/talk-out balance can thus be easily achieved with simple backbone system configuration.

Portable radio coverage problems are further compounded by the fact that users often operate within radio resistant areas such as warehouses, office buildings, apartment structures, hospitals, and single-family dwellings. The need for reliable communications within building structures requires increased talk-in/talk-out system gain.

Further complicating the design of portable-based systems are desired mechanical and ergonomic features, as summarized below:

1. The radio package, itself, must be simple to operate and have a minimum of operator controls or feature selections.

2. Radios contain a microphone, speaker, talk group selector, volume control, power switch, emergency button, and normal transmit push-to-talk button. All of these input/output devices are subject to near-constant physical abuse within a public safety environment.

3. User must be able to disable message authorization tones.

4. The volume control must be fully adjustable from zero to maximum audio output level.

5. Unit must be extremely rugged to withstand shock and vibration typical of public safety operations. For the Fire Department and Police Department, other features such as Intrinsically Safe operation and the ability for the equipment to survive short term water submersion are required.

6. Units must be operable, within the coverage requirements of Section 7.0, using the smallest flexible antenna available.

7. Radio unit battery packs must operate to provide sufficient power for a full twelve-hour work period. A range of accessories must be available for support in-field battery charging.

8. Radio units must be equipped with 8 character minimum alphanumeric displays to more readily identify selected talk groups and operating modes, i.e. clear voice, encrypted voice, etc.

9. Radios must be capable of operation with traditional speaker/microphones as well as sub-miniature radio surveillance accessories.

10. In addition to the specific desired features indicated above, all furnished equipment must meet minimum equipment requirements identified in Section 5.0.

11. The City of Hialeah desires programmable front and side buttons, and status message capabilities.

12. Hialeah requires a backlit display as a standard feature on all portable and mobile subscriber equipment.

3.2.5 Interoperability

As this new network's coverage footprint will duplicate or partially overlap outside-of-network agency radio communication systems, direct unit-to-unit interoperability is a desired feature. Special talk groups must be provided so that certain public safety users can have access to outside-agency radio networks, regardless of frequency band or communications technology in place.

The methodology of network access is to be accomplished by transparent radio and/or audio links (computer controlled) where the need for linkage is frequent. In those cases where the need for interoperability is relatively infrequent, links can be established manually by the E911/Dispatch Center or the backup 911 Center. In any case, proposed interoperability linkage systems shall be configured such that multiple and successive, narrow bandwidth vocoder schemes are avoided. This is necessary to prevent excessive audio quality degradation as is the cumulative effect of multiple and successive AMBE/AMBE vocoding.

Surrounding public safety radio systems:

Broward County
City of Miami Coral Gables
Florida Highway Patrol
Miami Beach
Miami-Dade County
Miami Springs

4.0 Infrastructure System Configuration

4.1 General

The City of Hialeah currently has four existing 800MHz licenses for this project as outlined in Section 2.0 above. The winning vendor will be required to do all the license modifications.

Proposers are required, by Section 6.2, to provide a comprehensive functional and technical proposal for a multi-site Project 25 compliant 800MHz linear simulcast trunked radio network. This radio network should be deployed to operate as a P25 Phase I FDMA system. In addition, this 800MHz radio network is required to be capable of doing both P25 Phase I FDMA & P25 Phase II TDMA without the elimination or addition of any existing hardware.

The new digital voice network shall utilize the necessary number of infrastructure sites, as determined by the Proposer, to meet the City of Hialeah's coverage requirements, and shall have both a main controller and a geographically separate redundant controller.

Proposers shall indicate a guaranteed level of portable and mobile area coverage and delivered audio quality indicative of their design. Alternative multi-site design submittals using radio technologies other than a spectrally efficient simulcast prime component will not be considered as acceptable. The topography of the City of Hialeah coupled with user expectations for highly-reliable portable radio coverage within buildings, can be most efficiently and optimally resolved using the inherent antenna space diversity and receiver-voting characteristics intrinsic of linear simulcast trunked radio configurations as compared to multisite-switched trunked radio configurations.

Proposers are required to furnish and install transmit and receive site equipment/configurations to meet Section 7.0 (Coverage Requirements) and that adhere to those minimum technical requirements identified in Section 5.0 for fixed site and microwave equipment.

Physical plant modifications to newly proposed City-owned sites, rental sites or existing City-owned sites, as necessary, to accommodate newly proposed network solutions, shall be the responsibility of the Contractor and must be factored into each Proposal Submittal's cost estimate. **A Proposer's failure to disclose physical plant modification cost is contrary to the City of Hialeah's turnkey project requirement and shall result in an unfavorable evaluation of that Proposer's Submittal.**

Proposers shall provide all pertinent information concerning their equipment, relative to electrical, mechanical, structural and physical space requirements. Proposers must consider enhanced security and environmental issues in preparing their Proposal Response. Any known deficiencies in City-owned sites, as well as for any newly proposed sites, that factor into the proposed solution (inclusive of electrical or lightning protection systems) shall be stated in the Proposal Response.

It shall be the responsibility of the Proposer to provide a turnkey system and to install industry accepted standard electrical grounding systems and lightning protection devices to protect

proposed equipment from damage due to electrical transients on antenna systems, power, telephone and/ or control cables.

Sites determined by the Proposer to be potentially prone to flooding or other environmental problems must be so noted by the Proposer in their Proposal Response. Engineering remedies must be based on 100 Year Flood Plain data.

This P25 800MHz digital trunked radio system will initially be sized to support the existing analog network system user load (approximately 1,800 users) but is anticipated to grow by approximately 25% additional capacity within the next five years. Therefore, the proposed new radio network shall be capable of straightforward channel expansion via 700/800MHz, without the addition or elimination of any existing previously installed equipment, to support ever-increasing user needs.

The City of Hialeah has determined that standards-based APCO Project 25 digital voice radio technology will adequately serve present and anticipated future needs for the City of Hialeah and local government agencies and shall be provided by the Contractor.

The delivery to and installation of: equipment shelters, security systems, standby and emergency power systems, towers, antenna systems, electrical grounding systems, lightning protectors, transmission lines, cable attachment hardware, ice shields, tower-to-building cable tray hardware and all necessary permitting is part of this project and must be furnished by the Contractor.

All transmit/receive site-related equipment shall be remotely controlled via digital microwave from the City of Hialeah's existing E911/Dispatch center located, as well as their backup center at the Hialeah Police Department. Any proposed use of leased telephone interconnectivity in lieu of a licensed microwave subsystem or City-owned fiber-optic facilities (if any at the time of implementation) for all or any portions of this digital radio infrastructure, unless otherwise allowed by this Specification, is unacceptable. It is desired that the radio network's infrastructure be supported by a dual hot-standby microwave loop(s) configuration. The vendor is encouraged to provide alternative licensed microwave configurations with the pro and cons of each configuration, which ultimately cannot lead to any one single point of failure caused by the technical or catastrophic loss of any site.

The Contractor shall furnish and install all wiring, wiring hardware, interface electronics and materials necessary, and at no additional cost than that identified in their Proposal/Contract, to complete the successful implementation and operation of their proposed P25 800MHz digital radio network and its related equipment groupings.

4.2 Simulcast Configuration

4.2.1 General

Section 2.0 of this Specification generally describes the City of Hialeah's existing 800MHz trunked analog voice radio network. Proposers are required, by Section 6.2, to provide a comprehensive functional and technical proposal for a multi-site Project 25 compliant 800MHz

linear simulcast trunked radio network. The new digital voice network shall utilize the necessary number of infrastructure sites, as determined by the Proposer, to meet City coverage requirements. It is expected that the three existing sites, plus an additional fourth site in the newly annexed area will be required to meet coverage needs throughout Hialeah.

Therefore, it is desired that the new Project 25 compliant 800MHz simulcast trunked radio system incorporate infrastructure pricing for four sites, as a minimum RFP requirement. Proposers are encouraged to propose additional system design alternatives to a four site design if they choose.

4.2.2 Control Point (Prime Site) Equipment

The Control Point equipment site shall contain, minimally, the following major equipment groupings:

System Controller
Simulcast Equalization/ Sync Equipment
Console Electronics/ Audio Controller
Remote Sites Microwave Link
Redundant local area network routers/switches
Battery & Inverter Systems
Adequately sized standby power
Connectivity to accessed Emergency Power
Interoperability Link Base Stations
Link Control Equipment
Radio/ Microwave Alarm System
HVAC System
Inert Gas Fire Suppression System

The Contractor shall furnish and install all wiring hardware, cable trays, interface electronics, terminal blocks, and materials necessary to complete the successful implementation and operation of this site and its equipment groupings. Infrastructure equipment proposed for the Control Point must meet the minimum requirements specified by Sections 5 and 6.

It is acceptable for the Control Point site to also serve as a co-located simulcast radio site. However, the City of Hialeah has expressed concern over the potential vulnerability of a single Control Point location at the Hialeah Fire Department, as it could inadvertently become a single-point failure mode for the new digital radio network. Therefore, Proposers are required to incorporate an optional dual Prime Site/ Redundant Control Point design into their proposed solution. **This submittal requirement is mandatory and those proposals failing to include such a dual-site redundancy option will be considered as being unresponsive to these Specifications.**

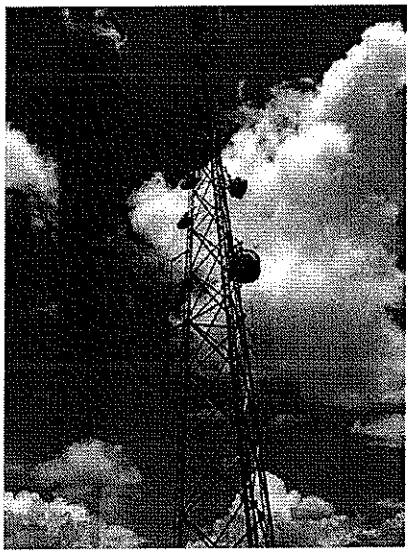
4.2.3 Typical Simulcast Infrastructure Site Deployment

Proposers are required to supply a turnkey solution to include: all technical support, equipment, material and labor necessary to develop each proposed linear simulcast infrastructure site into a

functional P25 800MHz digital radio facility, fully incorporated into the specified communications system.

The City has the following locations that are required infrastructure sites for the new P25 800 MHz digital simulcast trunked radio network. The winning vendor shall be required to have a structural analysis, performed by a Florida licensed structural engineering firm, on each of the three PiRod towers as well as the ROHN SSMV tower, per the latest TIA-222-G specifications and current Florida Building Code. Be advised that per the analysis results, the ROHN SSMV tower/foundation may need to be upgraded to comply with the latest code. The winning vendor will be required to have this work completed. Cost for the upgrades will be negotiated, by change order, after the analysis has been completed.

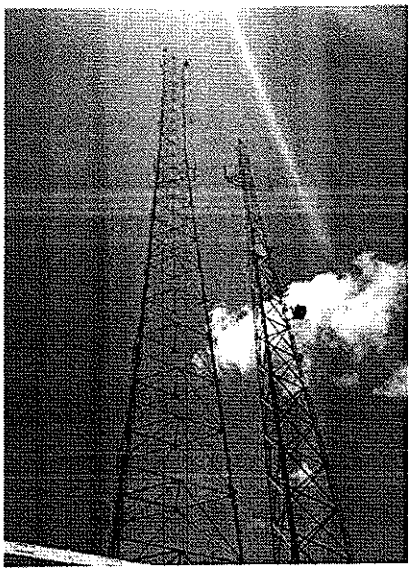
Site #1
Hialeah Fire Department
Lat: 25°49'36.90"N
Long: 80°16'48.54"
ASR#: 1056512
AGL: 200'
Site Elevation: 7'
Tower Type: SST
Build Date: 04/1998
TIA-222 Revision: F
Owner: City of Hialeah



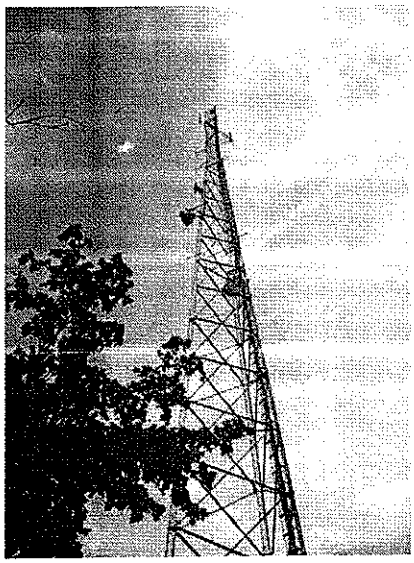
Site #2
Hialeah Police Department
Lat: 25°52'19.97"N
Long: 80°15'55.43"W
Site Elevation: 7'

PiRod SST (Right)
ASR#: 1062720
AGL: 200'
Tower Type: SST
Build Date: 03/1999
TIA-222 Revision: F
Owner: City of Hialeah

ROHN SSMV (Left)
ASR#: 1056510
AGL: 200'
Tower Type: Self-Support
Build Date: 03/1999
TIA-222 Revision: F
Owner: City of Hialeah



Site #3
Bucky Dent Tower Site
Lat: 25°52'30.21"N
Long: 80°19'45.03"W
ASR#: 1056511
AGL: 200'
Site Elevation: 7'
Tower Type: SST
Build Date: 04/1998
TIA-222 Revision: F
Owner: City of Hialeah



The City of Hialeah will require a fourth site to be built, as a part of this RFP, in the newly annexed portion of the City. Site #4 should be a turnkey solution. The City will provide the land, but it will be the vendor's responsibility to provide the tower, shelter, permits, FAA, NEPA, NHPS, geotech (soil) studies, soil preparation, tower and shelter foundations, site fencing, main FPL power, diesel fuel generator, battery backup, antenna systems, etc. Vendors shall also be required to extend the FCC licenses and FRIP study to the annexation as well.

Site #4
Annexation Tower Site
Lat: 25°54'50.47"N
Long: 80°21'45.51"W
ASR#:
AGL: 200'
Site Elevation: 17'
Tower Type: SST
Build Date: Pending
TIA-222 Revision: G
Owner: City of Hialeah

The construction of the site access road shall be the responsibility of the City. As mentioned above, the availability of electric and gas utilities shall be the responsibility of the Contractor. Improvements to the land spaces utilized by the towers, equipment shelters, site grounding, site civil work, security systems, all permitting, including, but not limited to NEPA, SHPO, FAA, etc., on-site electrical services and standby power systems shall be the total responsibility of the Contractor.

As an option, please include the installation of a donated 10x20 shelter rated for 200 amps, at the Hialeah Police Department tower site (Site #2). The vendor will be required to provide permits, soil studies, soil preparation, slab, fencing, main FPL power, etc. More information will be available during the mandatory pre-bid conference and corresponding site visits. It will also be required that the vendor perform the necessary modifications and/or construction of a new ice bridge that will go from the towers to the shelter. This shelter will be used to relocate existing non-trunked radio systems from the communications building and to house the new 800MHz P25 system. NOTE: IT MAY BE REQUIRED TO INSTALL UNDERGROUND PIPES or DUCTS FROM THE SHELTER TO THE BUILDING FOR THE USE OF FIBER OPTICS TO CONNECT THE CONSOLES TO THE RF EQUIPMENT. COPPER USE SHOULD BE AVOIDED TO PREVENT LIGHTNING DAMAGE.

Proposers shall refer to Sections 9.0, 10.0 and 11.0 for specific requirements pertaining to equipment shelters, towers and standby generator systems.

A typical P25 digital simulcast radio infrastructure site equipment shelter shall contain, minimally, the following major equipment groupings:

800 MHz Simulcast Transmitters (no less than 15 channels)
800 MHz Simulcast Receivers (no less than 15 channels)
GPS Disciplined Local Oscillator
Simulcast Timing/ Delay Equipment
Transmitter Combiner System
Transmitter Antenna Systems
Receiver Multi-Coupler System
Receiver Antenna System
Tower Top Preamplifiers
Remote Site Microwave Links
Site Alarm Equipment
Battery & Inverter Systems
Adequately Sized Standby Power
Connectivity to Emergency Power

Infrastructure equipment proposed for all simulcast sites must meet or exceed the minimum requirements specified by Sections 5.0 and 6.0.

4.2.4 Site Power Systems

The radio repeater stations shall operate from the *existing* 48VDC power source. The proposed MW radios at each site shall operate from a new 48VDC battery backup system, sized to sustain full feature operation for a minimum 24-hour period. The battery system shall utilize sealed lead-calcium cells and 100% redundant battery charger components rated for telecommunication service. An automatic low voltage disconnect device shall be provided for each set of batteries to protect the battery plant from discharge-related damage. Electrical power switching/disconnect capability shall exist at all sites such that rectifiers, batteries as well as commercial power sources may be separately isolated in a manner in which each component may be worked on safely. This switching/disconnect capability shall be designed and configured such that radio network operation is unimpaired and uninterrupted during any repair or maintenance cycle.

Repeater stations shall be housed in open equipment racks. Racks shall be free standing and incorporate drilled rails to accept standard 19" rack panels.

A minimum of six, but no more than eight DC-operated repeater stations should be located within a single equipment rack. Each rack shall be power-supported by redundant, metered DC/DC power converters (if required by equipment design) sufficient to sustain the continuous operation of all repeater stations installed within that one rack.

Each equipment rack shall incorporate a circuit-breaker power distribution panel incorporating protection for power amplifier, exciter and receiver groupings. Individual repeater station ventilation fan(s), if required, shall be DC powered and thermostatically controlled. Each

equipment rack shall be protected by a DC-power circuit breaker, sized for nominal load plus 35% overload factor.

The primary battery chargers, low voltage disconnects and a primary DC circuit breaker panel shall be installed in a freestanding enclosed relay rack unit. Likewise, the system controller and console/audio controller equipment shall be housed in freestanding equipment racks similar to those used for repeater stations.

Each controller shall be powered either directly from the DC Battery Plant or by individual, redundant DC/120VAC power inverters whose minimum site/system capacity shall be twice that of calculated controller loads, i.e., if calculated controller load is 1KW the inverter shall be rated for no less than 2KW.

Auxiliary site loads essential to proper system operation, i.e. tower top preamp, redundant GPS reference oscillators and receiver multi-coupler, shall be interconnected directly to the site's battery system. Additionally, the redundant GPS reference oscillators shall have a properly sized UPS between the oscillator and the battery supply.

4.2.5 Infrastructure Functionality

The proposed digital radio solution shall utilize a P25 Common Air Interface (CAI) digital control channel scheme, in which user-initiated feature requests and talk group/working channel assignments are processed digitally over a single control channel. The remaining channels shall operate as working channels for analog or digital voice traffic.

Use of infrastructure solutions involving embedded control signaling in lieu of this single digital control channel concept are contrary to Project 25 requirements and are not acceptable. Additionally, the single digital control channel shall have a level of redundancy sufficient to meet the overall requirements and intent of this specification for a no-break, life-critical radio communications network. Redundant control channels must automatically rotate in sequence to "exercise" this support capability in a controlled scheme. When not in use as a control channel, the previously-assigned control channel will operate in the trunked pool of digital voice channel.

The proposed solution must be robust in design to assure continued operation should any of the following failures (or combination thereof) occur:

A. Loss of transmitter(s) operation
B. Loss of receiver(s) operation
C. Failure of dispatch console terminal(s)
D. Failure of console/ audio controller
E. Failure of one site controller
F. Loss of DC-DC power converter(s)
G. Failure of entire single site.
H. Loss of Control Channel(s)
I. Loss of Prime Site/ Control Point

J. Loss of single/multiple microwave path connectivity

Proposers shall furnish a description of the effect each of the above listed failure modes would have on their proposed network configuration. Proposers shall also describe appropriate mitigation/restoration steps to return the network to full operational capability in response to each of the above listed failure conditions.

4.2.6 Simulcast Site Antenna Systems

The Contractor shall furnish and install antenna systems specifically designed to meet the coverage requirements and objectives described by Section 7.

The Contractor shall equip all antennas, with gas tube lightning arrestor devices (Polyphasor or equivalent). All coaxial cable elements used as interconnecting jumpers for outdoor-mounted equipment or transmitter components shall be 1/2" Andrew FSJ4-50B or equal. Receiver multi-coupler interconnecting cables shall be 1/4" Andrew FSJ1-50A.

Contractor shall furnish and install hot dip galvanized side mount hardware sufficient to extend the transmitter/ receiver antennas a minimum of 60-inches from the nearest tower-structure element. Transmission lines shall be grounded at the antenna, at 200ft tower intervals, at the top most part of the tower location, at the midpoint (for all towers greater than 200-feet in height), at the location where the transmission lines enter the cable bridge and at the equipment shelter's transmission line copper entry port. Only grounding strap kits, manufacturer-approved for the type of transmission line installed, shall be provided. All cable shall be neatly run down a single leg of the tower on tower cross brace brackets. All connecting hardware will be a snap-in type of a size designed for the cable. No tie wraps or electrical tape will be allowed for attaching cables to towers.

Antenna system mounting brackets, components and associated transmission line attachment hardware shall be either stainless steel or hot-dipped galvanized steel.

4.2.7 System/Audio Control Scheme

The proposed radio network must incorporate high levels of redundancy to assure continued trunked system operation. To provide the highest level of trunked reliability, site/system control schemes shall be IP-based, fully redundant and utilize distributed processor technology to the maximum extent possible.

Site/System control schemes must include protected power supply units so that the loss of a single power supply will not interrupt control scheme operations.

Site/System controllers shall minimally provide the following features:

1. Working channel assignment.
2. Verification of user identification.
3. Assignment of call priority.
4. Electronic documentation of call type, caller/ called, call time, channel assignment, etc.

5. Monitor/control of special system features such as unit-specific calls, telephone interconnect and talkback paging operations.
6. Ability to disable/ enable call access to specific field units.

The console/audio control scheme shall be equipped to initially support the current dispatch console deployment operable in the existing analog trunked 800MHz radio systems.

The console/audio control scheme shall be configured to provide the necessary T-1 connection(s) to a shared radio traffic audio recording device. This device shall be of a trunk-tracking design in which all radio traffic conducted over the proposed number of voice channels and the digital control channel will be archived. This recording device is part of this voice radio communications network project and should be considered for migration to the proposed system. The current logging recorder is a 72 channel Voice Print recorder manufactured by Replay Systems and is integrated into the existing Positron Front Line VIPER CAD dispatch consoles, that is shared by all users of the City's radio system.

4.2.8 Radio Network Alarm System

The Contractor shall furnish and install an automatic alarm system to monitor and alert, as a minimum, status (per site) on the following radio system operating parameters:

Major Alarm Conditions

1. Site Controller Failure.
2. Control Channel Failure.
3. Console/Audio Controller Failure
4. Receive Amplifier Failure
5. AC Power Failure
6. High Reflected Power, TX Antenna
7. Battery Charger Failure, Major
8. Generator Failure
9. Tower Light Failure
10. Over/ Under Temperature Alarm (HVAC failure)

Minor Alarm Conditions

1. Door Alarm
2. Tripped DC Breakers(s)
3. Low Transmitter Output (each transmitter)
4. Battery Charger Failure, Minor
5. Low Fuel

A summed major/minor alarm indication should be displayed on each alarm system terminal position. This alarm indication should appear as a flag at a conspicuous area on the flat-screen

display field. Determination of specific alarm point conditions shall be obtainable from any dedicated alarm system terminal position.

4.2.9 Regional Interoperability via Project 25 ISSI

Currently, the nearby counties operate a variety of conventional and trunked radio communication systems on different frequency bands. Please refer to Section 3.2.5, for interoperability requirements with surrounding radio networks. The City of Hialeah is, by virtue of this Specification, planning its radio network modernization toward Project 25 Phase I and II compliancy. Other jurisdictions within the Region are either actively considering the use of Project 25 technology or, are currently in the procurement processes.

In any case, the critical importance placed on seamless interoperability between Project 25 digital voice radio networks, of various manufacture, cannot be overstated.

The set of minimally-acceptable feature and protocol standards to facilitate the linkage of distributed Project 25 radio systems has been defined as the Inter Sub System Interface, or ISSI. In 2006 a series of protocols and procedures for an initial layer of multi-network interoperability was approved by the APCO Standards Committee. This initial ISSI release defined trunked group and individual call transport between multiple systems as well as subscriber user roaming and unit authentication. Future ISSI releases will encompass other features such as Over-the-Air Rekeying; data transport; cross-network console operability and conventional radio system interoperability.

Proposers shall be required to describe how their proposed City of Hialeah radio network solution can be interfaced to other regional Project 25 radio networks now under development or procurement planning.

4.3 Subscriber Equipment

Mobile, portable and control station equipment requirements are identified in Sections 5 and 6. Specific equipment groupings and quantities are contained in Section 16, Pricing.

4.4 Legacy Interoperability and Backup Radio(s) System

Computer-controlled (radio user initiated) and dispatcher-controlled interoperability link stations shall be located at the most appropriate infrastructure tower location to achieve no less than DAQ 3.4 audio quality into the distant host network. The City of Hialeah preference for interoperability link station placement is at the City of Hialeah owned sites, if any are proposed in the design.

All interoperability sub-system antenna transmission lines shall be 1/2" Andrew LDF4-50A or equal and equipped with suitable lightning and electrical surge protection devices.

The proposed network shall include all computer-controller interfaces, control station(s) and antenna systems necessary to successfully provide the interoperability described above and by Section 3.2.6. Proposers should consider the re-use of existing non-obsolete the City of Hialeah-owned VHF, UHF and/or 800MHz base station equipment to meet identified interoperability

requirements. Should a Proposer intend to reuse existing equipment, those types of equipment must be identified in the Proposal Response. If such interoperability equipment is a current component of the analog system, those items may not be removed from regular operational use if doing so would degrade existing conventional 800MHz analog capabilities. Such equipment, however, may be tested during installation and implementation of the proposed system solution and at the conclusion of user migration, may be converted to a resource of the new digital radio network.

Computer-controlled interoperability links shall become active only whenever a user has specifically selected, from its portable/mobile unit, any one of the interoperability link talk groups defined by Section 3.2.6. These links shall also be available for dispatcher monitoring and/or selection.

4.5 Voice Encryption

Each of the proposed P25 trunked digital RF channels shall be equipped to support voice encryption using the Advanced Multiband Excited +2 (AMBE+2) vocoder.

The number and tiers of radios requiring encryption has been provided in Section 16, Pricing Considerations. Encrypted mobile and portable units shall be of the same physical size and general configuration as non-encrypted units. Accessory equipment shall work compatibility with both types of units.

Proposed radio coverage throughout the identified the City of Hialeah service area, in the digital encrypted mode, shall be equal to that in the digital clear mode.

4.6 Fire Station Alerting System

The Hialeah Fire Department desires the continued ability to perform individual fire station alerting. The Department's fire station alerting is currently accomplished using audio broadcasted to the station on a UHF T-Band narrowband analog channel with a dedicated 70 volt PA system. The Fire dispatch main talkgroup is permanently patched to the UHF channel with the purpose of broadcasting the call on both frequencies in case fire fighters are out of the station on a call or in training.

4.7 The City of Hialeah Mutual Aid System

Hialeah is currently licensed to operate on State of Florida designated Mutual Aid channels. Both dispatch centers are equipped with 8CALL90 and the respective tactical channels. Proposers shall maintain the same level of mutual aid with the new system. The 800MHz Mutual-Aid System infrastructure will be located at the Hialeah Fire Department site.

The 800MHz Mutual Aid System will not be required to meet the coverage requirements of the P25 800MHz Digital Trunked Radio System, however, proposers shall provide coverage maps of

the 800MHz Mutual Aid System. The coverage maps should include both mobile (talkout & talkback) and portable outdoor (talkout & talkback) down to a level of -106dBm.

5.0 Minimum Operative Characteristics

5.1 General

Section 3.0, Identified User Needs, described the minimum functionality required by the City's various user agencies. In this Section, channel usage characteristics for departments now operable on Hialeah's analog trunked 800MHz radio networks, will be presented. From this information Proposers can better determine the scope of services needed to satisfy talk group structure requirements for this project.

5.2 Public Safety and Local Government Departments

The City of Hialeah Police, Fire, Local Government and Public Works have utilized the existing analog radio system for many years. During that time, the various talkgroup structures for each have been modified to better suit individual department needs.

Proposers should assume that the current talkgroup assignment/usage will be replaced with the new digital radio network with similar trunked radio talkgroup structure. Attachment A contains an Interoperability Matrix covering all the agencies inside of the City of Hialeah and how they should interoperate with each other.

5.3 Intermodulation Study

It is a well-known fact that interference impacts P25 systems in a very negative way degrading communications regardless of the manufacturer of the radio system. The awarded vendor needs to ensure that communications are free of interference or degradation due to intermodulation (IM) products. An IM study shall be required to be provided prior to the Customer Design Review (CDR).

5.4 In-Building Penetration

To address the density associated with commercial, industrial and residential structures with the City of Hialeah, both existing and proposed for the near future, propagation studies shall assume a minimum penetration loss of -23dB for all buildings.

6.0 Minimum Equipment Requirements

This Section describes the minimum acceptable requirements for mobile, portable, control station, and fixed-site radio equipment. All radio equipment installed or provided by the Contractor shall be FCC type accepted under Part 90 of the FCC Rules and Regulations. All supplied equipment shall be in current production and shall meet or exceed the requirements of this Section. Additionally, all proposed equipment intended for public safety use must meet State of Florida Law Enforcement Communications Plans (Law Enforcement and EMS) specifications.

Base station/repeaters shall support APCO Project 25 Phase I and Phase II modulation formats and shall support trunked mobile data technology. If substantial upgrading is involved to support trunked mobile data operations, Proposers shall clearly identify what will be required to "upgrade" a repeater to support mobile data computing and supportive application software. Proposers shall be specific in their responses and shall avoid ambiguous statements such as "digital capable", "digital ready", "P25 capable", etc.

The stated minimum requirements, below, for end-user equipment will not necessarily be required on all individual units assigned to non-public safety user agencies. Appendix A, Subscriber Radio Requirements contains those user radio configurations required for each agency/department.

6.1 Mobile Radio Equipment

A. Must meet APCO minimum recommendations and EIA/TIA standards for Project 25 Public Safety 700/800MHz digital trunked radio systems. Furnished equipment must be operable on both Phase I and Phase II infrastructures.

B. Incorporate heavy-duty construction, weather-sealed enclosures and weather-sealed controls to meet Military Standard 810 C, D, E, F and G for water, shock, vibration, dust, humidity and high/ low temperature performance.

C. Allow operations on P25 trunked systems with priority scan of talk groups or channels.

D. Front mount and rear mount, dual control-head with single rear mount radio and dual radios with single control-head configurations must be available to meet the needs of the different public safety departments. Rear mount radios may require weatherproof control heads, speakers, microphones and other accessories (specific for fire operations).

E. Incorporate electronic, backlit alphanumeric displays (minimum of eight characters) to provide visual indication of system availability, channel/talk group selection, incoming user ID, call alerts and operational status such as scan and channel busy.

F. Include, emergency priority button on mobile radio control panels to initiate an emergency priority call.

G. Mobile equipment shall support special services, i.e. encrypted voice, Computer Aided Dispatch (CAD), and Automatic Vehicle Location (AVL).

H. Include external alarm dry-contact closure to provide activation of a horn, light, etc. whenever the radio unit is individually called.

I. Be capable of providing data transmission capabilities.

J. Offer digital voice encryption, using an Advanced Multi-Band Excited +2 (AMBE+2) P25 Phase I and Phase II vocoder technology, and federally approved 256-bit AES coding to provide security during transmission and reception of sensitive communications.

K. Radio operating information shall be contained in an electrically erasable memory device. Unit will be fully programmable from an IBM PC compatible computer. Sufficient quantities of programming cables shall be part of the delivered equipment.

L. Include a transmit time out timer to warn the user of excessive transmission length. Time out timer should automatically disable the radio's transmitter after a pre-determined period; thereby eliminating talk group/channel interference caused by either a defective speaker/microphone or PTT button.

M. Proposed mobile radios must be operable on 800MHz NPSPAC frequencies as well as 700/800 MHz conventional and trunked frequencies.

N. Minimum Electrical Specifications as follows:

Primary Input Voltage:	11 to 16 VDC, negative ground
Battery Drain:	Standby: 1.5 amperes, max. Receive: 4.0 amperes, max. Transmit: 15.0 amperes, max.
Environmental:	MIL-STD 810 C, D, E, F and G for shock, vibration, humidity and high/low temperature.
Temperature Range:	-30 °C to +60 °C
Humidity:	95% relative humidity at 50 °C
Talk Group Selection:	Rotary-knob style

Transmitter

Frequency Range:	764 to 870 MHz

Channel Capacity:	500 channels (Single band radio) 700 channels (Multi-band radio)
Talk Group Capacity:	16 minimum, per system
RF Output Impedance:	50 ohms
Output Power:	30 W (700 MHz)/35W (800 MHz) (Single band radio) 35 W (Multi-band radio)
Channel Spacing:	12.5/6.25 KHz/NPSPAC
Spurious/Harmonic:	At least 64 dB below carrier
Frequency Stability:	1.5 PPM from -30°C to 60°C
Frequency Spread:	24 MHz (700 MHz)/18 MHz (800 MHz)
Modulation:	11K0F3E, 8K10F1E, 16K0F3E, 8K10F1D
Modulation Deviation:	+/- 2.5 KHz for 12.5 KHz Channel +/- 3 KHz for NPSPAC
Audio Distortion:	Less than 5% at 1 KHz
Audio Response:	+/-3 dB of a 6 dB/octave pre-emphasis characteristic from 300 Hz to 3 KHz
FM Hum and Noise (Analog):	-34 dB
Duty Cycle:	Transmitter 20% Receiver
Frequency Range:	764 to 870 MHz
Channel Capacity:	500 channels (Single band radio) 700 channels (Multi-band radio)
Channel Spacing:	12.5 KHz/6.25 KHz; NPSPAC
Digital Sensitivity, 5% BER:	0.35 µV (Single band radio) 0.25 µV (Multi-band radio)
Adjacent Channel Rejection:	-60 dB
Frequency Stability:	1.5 PPM from -30° to 60°C

Frequency Spread:	24 MHz (700 MHz)/18 MHz (800 MHz)
Modulation Acceptance:	+/-7 KHz
Intermodulation Rejection:	-75 dB (Single band radio) -80 dB (Multi-band radio)
Spurious Response Rejection:	-75 dB (Single band radio) -80 dB (Multi-band radio)
Audio Output:	10 W (Single band radio) 12 W (Multi-band radio)
Audio Distortion:	No more than 3% at 1 KHz
Duty Cycle:	Receiver 100%

6.2 Portable Radio Equipment

A. Must meet APCO minimum recommendations and EIA/ TIA standards for P25 Public Safety 700/800MHz digital trunked radio systems. Furnished equipment must be operable on both Phase I and Phase II infrastructures.

B. Include heavy duty construction and weather-sealed cases to meet Military Standards 810 D, E, F and G for shock, vibration, dust, humidity, high/low temperature and blowing rain.

C. Allow operations on P25 trunked systems with priority scan of talk groups or channels.

D. Include top mounted rotary controls with positive stops for volume and channel selection. Control placement must be sufficient to allow gloved hand operation, as is typically needed by the fire service.

E. Incorporate electronic, alphanumeric (minimum eight character) backlit display to provide visual indication of system availability, channel/talk group selected, incoming user ID, call alerts and operational status such as scan, transmit or low battery.

F. Include transmit time out timer to warn the user that the radio may be transmitting longer than a predetermined time limit and then disable the transmitter.

G. Contain no protruding push-to-talk switch, thereby preventing accidental transmitter operation or potential damage to the switch caused by impact.

H. Include a protected emergency button to allow easy access when needed, but incorporating an ergonomic design in which the emergency function could not be accidentally activated.

I. An accessory receptacle shall be provided for the connection of external devices such as remote microphones or combination remote speaker/microphone units (with or without antenna), vehicular adapters, and mobile data computer equipment.

J. Radio operating information shall be contained in an electrically erasable memory device. Unit will be fully programmable from an IBM PC compatible computer, via the accessory receptacle. Sufficient quantities of programming cables shall be part of the delivered equipment.

K. Proposed portable radios, batteries and accessories (used by both the Fire Department and Police Department) must be approved by Factory Mutual as intrinsically safe for the following hazardous environments: Class I and II Division I, groups C, D, E, F and G and non-incentive for Class I, Division 2, Groups A, B, C and D.

L. Carrying case options should include leather carrying case with swivel mounts, as well as chemical resistant cases (nylon or similar plastic material) for use by hazardous material groups. Additionally, a quantity of battery belt clips should be included to match the number of non-public safety portable radios supplied for all agencies.

M. Optional surveillance accessories such as miniature microphones, earpieces and remote microphones and headset speaker microphones must be available.

N. Offer digital voice encryption, using an Advanced Multi-Band Excited +2 (AMBE+2) P25 Phase I and Phase II vocoder, and federally approved 256-bit AES coding to provide enhanced security during transmission and reception of sensitive communications.

O. Provide single-unit 120VAC rapid charger capable of fully charging a discharged high capacity battery pack within a one-hour period. Provide optional single-unit 12VDC rapid charger for vehicular operation.

P. Battery shall operate the proposed radio equipment a minimum of twelve-hours using a duty cycle of 5% transmit, 5% receive and 90% standby.

Q. Proposed portable radios must be operable on 800MHz NPSPAC frequencies as well as 700/800 MHz conventional and trunked frequencies.

R. User programmable audio alert in the event of loss of control channel (must be a standard feature in present and all future proposed public safety models).

S. Minimum electrical specifications as follows:

Primary Input Voltage:	120 VAC, 60 Hz, single-phase with 3 conductor grounded line cord.
Environmental:	MIL-STD 810 C, D, E, F and G for shock, vibration, humidity and high/low temperature.

Temperature Range:	-30°C to +60°C
Humidity:	95% relative humidity at 50°C
Talk Group Selection:	Rotary-knob style

Transmitter

Frequency Range:	764 to 870 MHz
Channel Capacity:	500 channels (Single band radio) 700 channels (Multi-band radio)
RF Output Impedance:	50 ohms
Output Power:	3 W
Frequency Stability:	1.5 PPM from -30v°C to +60v°C
Frequency Spread:	24 MHz (700 MHz)/18 MHz (800 MHz)
Modulation Deviation:	+/-5 KHz for 25 KHz Channel +/-3 KHz for NPSPAC
Emissions:	11K0F3E, 8K10F1E, 16K0F3E, 8K10F1D
Audio Response:	+/-3 dB of a 6 dB/octave
Audio Distortion:	Less than 5% at 1 KHz
Spurious/Harmonic:	-50 dB
FM Hum and Noise (Analog):	-35 dB (Single band radio) -48 dB (Multi-band radio)
Duty Cycle:	Intermittent

Receiver

Frequency Range:	764 to 870vMHz
Channel Capacity:	500 channels (Single band radio) 700 channels (Multi-band radio)
Channel Spacing:	12.5/6.25 KHz/NPSPAC
Modulation Acceptance:	+/-7 KHz

Adjacent Channel Rejection:	-60 dB (Single band radio) -65 dB (Multi-band radio)
Digital Sensitivity, 5% BER:	0.25 µV
Intermodulation Rejection:	-72 dB (Single band radio) -74 dB (Multi-band radio)
Spurious Response Rejection:	-72 dB (Single band radio) -70 dB (Multi-band radio)
Frequency Stability:	1.5 PPM from -30° to +60°C
Audio Output:	0.5 W
Audio Distortion:	No more than 3% at 1 KHz

6.3 Control Station Equipment

A. Must be available either as an integrated 120VAC powered desktop radio rack or a remotely located, AC powered radio package with separate remote control unit.

B. Control station and control unit shall have an optional provision to operate from standby 12VDC source upon failure of AC power.

C. Provision shall be provided for local and remote control operation of the control station.

D. Must meet APCO minimum recommendations and EIA/TIA standards for P25 Public Safety 700/800MHz digital trunked radio systems. Furnished equipment must be operable on both Phase I and Phase II infrastructures.

E. Allow operations on P25 trunked and conventional (analog/ P25) systems with priority scan of talk groups or channels.

F. Offer digital voice encryption, using an Advanced Multi-Band Excited +2 (AMBE+2) P25 Phase I and Phase II vocoder, and federally approved 256-bit AES coding to provide enhanced security during transmission and reception of sensitive communications.

G. Incorporate electronic, alphanumeric displays (minimum of eight characters) to provide visual indication of system availability, channel/talk group selection, incoming user ID, call alerts and operational status such as scan and channel busy.

H. Include transmit time out timer to warn the user that the radio may be transmitting longer than a predetermined time limit and then disable the transmitter.

I. Control station packaging shall incorporate sufficient electromagnetic shielding of radio and power supply components to allow multiple control stations to be located at the same site without causing unit-to-unit interference.

J. Proposed control station radios must be operable on 800MHz NPSPAC frequencies as well as 700/800MHz conventional and trunked frequencies.

K. Minimum electrical specifications as follows:

Primary Input Voltage:	120 VAC, 60 Hz, single-phase with 3 conductor grounded line cord.
Optional Battery:	12 VDC designed for 8 hrs. of operation
Environmental:	MIL-STD 810 C, D, E, F and G for shock, vibration, humidity and high/low temperature.
Temperature Range:	-30 °C to +60 °C
Humidity:	95% relative humidity at 50 °C
Talk Group Selection:	Rotary-knob style

Transmitter

Frequency Range:	764 to 870 MHz
Channel Capacity:	500 channels
Talk Group Capacity:	16 talk groups per system/tier, minimum
RF Power Output:	19 W (700 MHz)/30 W (800 MHz)
RF Output Impedance:	50 ohms
Channel Spacing:	12.5/6.25 KHz, NPSPAC
Spurious/Harmonic:	At least 70 dB below carrier
Frequency Stability:	1.5 PPM from -25 °C to 60 °C
Modulation:	11KOF3E, 16KOF3E, 8K10F1E, 8KF10D
Modulation Deviation:	+/-5 KHz for 100% at 1 KHz +/-3 KHz NPSPAC
Audio Distortion:	Less than 3% at 1 KHz

Audio Response:	+/-3 dB of a 6 dB-per-octave pre-emphasis characteristic, 300 Hz to 3 KHz.
Duty Cycle:	Transmitter 20-80%
FM Hum and Noise (Analog):	-34 dB

Receiver

Frequency Range:	764 to 870 MHz
Channel Capacity:	500 channels
Channel Spacing:	12.5/6.25 KHz/NPSPAC
Digital Sensitivity, 5% BER:	0.35 µV Adjacent Channel Rejection: -63 dB
Frequency Stability:	1.5 PPM from -25 °C to 60 °C
Modulation Acceptance:	+/-7 KHz
Intermodulation Rejection:	-75 dB Spurious Response Rejection: -75 dB
Audio Output:	5 W
Audio Distortion:	No more than 5% at 1 KHz
Duty Cycle (EIA):	Receiver 100%

6.4 Base/Repeater Stations

A. Must meet APCO minimum recommendations and EIA/TIA standards for P25 Public Safety 700/800MHz digital trunked radio systems. Furnished equipment must be capable of operating on a combined Phase I and Phase II infrastructure.

B. Equipment must comply with FCC Part 90 Rules and Regulations and State of Florida Law Enforcement Communications Plans for stability, deviation, spurious and harmonic emissions.

C. Base/repeater stations shall be designed for continuous-duty, 100% operation at full manufacturer's specification.

D. Infrastructure shall incorporate site monitor and infrastructure alarm systems having the ability to report major/minor infrastructure functionality alarms on multiple dispatch-located alarm console display devices. Additionally, the alarm reporting system shall have the capability of being remotely accessed for the monitoring and remote-interrogation of field/site related alarms, using a laptop configuration from any node within the network.

E. All transmitter sites shall utilize the existing 48VDC battery backup subsystem and must include an automatic transfer diesel fueled generator system.

F. The proposed infrastructure shall include a "Fail-Soft" trunking scheme designed to maintain network performance as critical site components fail. Proposed network solutions must be fault tolerant with redundant levels of computer hardware/software, as necessary, to maintain trunked operation during equipment failures.

G. System infrastructure equipment shall support special services, i.e. encrypted voice, data transmission, multiple Computer Aided Dispatch (CAD) system interfaces, Automatic Vehicle Location (AVL) interfaces, telephone interconnect, audio recording of talk groups, and collection of system operational data.

H. The proposed infrastructure solutions shall have the ability to be expanded, without having to replace previously installed equipment. The proposed infrastructure hardware must be configured to readily accept the installation of additional infrastructure sites above that included in the Proposer's design, to accommodate future population expansion and growth within the City.

I. Minimum electrical/engineering specifications as follows:

Power Input:	Configured for 48 VDC operation per Section 4.2.4.
Operating Temperature:	-30 °C to +60 °C
Humidity:	95 % relative humidity at 50°C (typical)
Environmental:	MIL-STD 810 C, D, E, F and G for shock, vibration, humidity and high/low temperature.
Temperature Range:	-30 °C to +60 °C
Humidity:	95% relative humidity at 50 °C
Talk Group Selection:	Rotary-knob style

Transmitter

Channel Capacity:	As needed
RF Power Output:	100 W
RF Output Impedance:	50 ohms
Frequency Spread:	24 MHz (700 MHz)/18 MHz (800 MHz)

Frequency Stability:	0.001 PPM from -30 °C to +60 °C ambient (referenced to GPS disciplined local oscillator frequency standards)
Emission Designator:	11K0F3E, 8K10F1E, 16K0F3E, 8K10F1D
Audio Response:	+/-3 dB of a 6 dB per-octave pre-emphasis from 300 Hz to 3 KHz, per EIA standards
Audio Distortion:	Less than 2% at 1 KHz
Spurious/Harmonic:	More than 70 dB below carrier
Modulation Deviation:	0 to +/-5 KHz P25 Compliant per TIA 102 CAAB
Frequency Range:	764 to 870 MHz
FM Hum and Noise (Analog):	-49 dB
Duty Cycle:	100% Continuous Operation

Receiver

Frequency Range:	764 to 870vMHz
Channel Capacity:	As needed
Channel Spacing:	12.5/6.25 KHz, NPSPAC
Modulation Acceptance:	+/-7 KHz minimum
Frequency Stability:	0.001 PPM from -30°C to +60 °C ambient. Referenced to GPS disciplined local oscillator frequency standards in simulcast configurations.
Digital Sensitivity, 5% BER:	0.28 µV
Adjacent Channel Rejection:	-60 dB minimum
Intermodulation Rejection:	-77 dB (700 MHz)/ -80 dB (800 MHz)
Spurious Response:	-90 dB
Audio Distortion:	No more than 3% distortion at 1 KHz

6.5 Fixed Microwave Equipment Requirements

A. Digital voice/data technology shall be used to minimize audio-phase delays and/or incompatibility of audio levels within the proposed network solution. Where VoIP techniques are used to interconnect infrastructure sites, in lieu of traditional PCM multiplex channel schemes, a robust means shall be provided thereby assuring that the highest priority possible is given to voice packet delivery.

B. Redundant transmit, receive and base band equipment for each site, configured for automatic hot standby operation, shall be provided. This redundant equipment must automatically switch to the hot standby component(s) upon failure of the primary equipment. Loop-switched configurations, where proposed, shall also incorporate monitored hot standby radio components.

C. A Microwave Alarm System shall be provided to monitor microwave site functions and to provide alarm status of abnormal operational parameters of equipment associated with the microwave system.

D. An order wire channel with individual site handsets must be provided to link all microwave locations for testing and troubleshooting.

E. A separate 48VDC microwave standby battery system shall be provided and sized for 24-hours of continuous microwave/ multiplex equipment operation at each infrastructure site. An automatic low-voltage disconnect system shall be employed to protect the battery plant from deep-cycle discharge damage.

F. The proposed microwave subsystem system shall be initially configured for 100% excess capacity to allow for future radio communication needs.

G. The operating frequency for the microwave system shall be no higher than the currently licensed 11GHz. All FCC frequency coordination, license application preparation and engineering activities associated with the development of the FCC license submittal, including path surveys, as necessary, shall be the responsibility of the Contractor. Any proposed use of unlicensed, spread spectrum microwave links is unacceptable.

H. Microwave system availability shall be no less than 99.99975% (78.8 seconds outage per year).

J. Proposed microwave antennas, radome, and antenna mounts must be capable of maintaining reliable operations during sustained storm force winds of up to 120mph. Each furnished antenna system shall be equipped with dual stiff arms/mounts to limit antenna vibration and flexing during high wind events. If space diversity is required because of the necessity for higher frequencies and the engineering constraints of longer distances, these requirements and all necessary materials shall be part of the Proposal.

I. The City of Hialeah desires the microwave links to be capable of a total bandwidth configuration of 155Mbps (OC3) and scalable to provide up to ten (10) isolated Ethernet ports with programmable bandwidth.

J. Minimum operational service parameters of each microwave link shall be as follows:

Unfaded Bit Error Rate (BER):	Not Less Than 10^{-10}
Calculated RF Link Fade Margin, Including Circulator, Connector, and Transmission Line Losses:	Not Less Than 40dB
Maximum Faded BER:	Not Less Than 10^{-6}

To coincide with 10^{-3} BER, to occur at a signal level not less than 3dB in excess of the calculated RF link fade margin.

Note: APCO minimum recommendations for Project 25 digital trunked radio systems include, but are not necessarily limited to, the following operational and functionality characteristics:

- Digital 9.6 kB Control Channel and Digital Working Channels
- Automatic Unit Identification
- Call Privacy
- Emergency Communications Priority Routing
- Centralized System Controller with Management Capabilities
- Multiple, Software Controlled Talk Groups
- Priority Talk Path Scanning
- Lost/ Stolen Radio Inhibit
- User Priority Levels
- Dynamic User Regrouping
- Telephone Interconnect Operation
- AMBE+2 Digital Vocoder
- Encrypted Digital Voice Operation
- Interoperability with outside conventional/trunked radio networks
- Direct interconnectivity with other Project 25 compliant network switches

7.0 Coverage Criteria

7.1 General

The new City of Hialeah P25 Digital Trunked Radio Network shall be designed to support portable hand-carried radio equipment, operated both on street and within residences/building structures, at physical locations throughout the City plus a three mile perimeter boundary. Proposers must fully identify and guarantee the coverage predicted for their proposed solution, per the functional and operational requirements of this Specification. The City has also identified those critical structures which shall have in-building portable coverage, and shall be included in the proposers Functional Test Plan and Coverage Test Plan for both signal strength and DAQ testing.

Proposers must take into account the following operating parameters in the development of their coverage guarantee:

A. Shoulder/microphone units without antennas will be used in most instances and shall be the normal configuration considered for the purpose of coverage design. Body and obstruction losses must therefore be considered in the proposed network design for both talk-in/talk-out coverage analyses.

B. Flexible, quarter wavelength antennas shall be required for portable units. Coaxial-skirt type antennas are not acceptable due to size and other mechanical limitations.

C. Building obstructions exist throughout the City of Hialeah Service Area. These must be considered in the development of the Proposer's coverage guarantee. As mentioned above, a listing of specific structures requiring in-building radio coverage is contained in Attachment C.

7.2 Service Area

Both mobile radio and portable radio on-street coverage must extend throughout no less than 95% of that area within the land region inclusive of the City of Hialeah, plus a three-mile perimeter overlapping area extending into its adjacent bordering counties. Desired in-building portable coverage shall be no less than 95% within the entire land area encompassing the County.

Coverage is defined as the minimum usable signal necessary to provide a clearly readable voice signal without repetition (no syllables lost) from locations within building structures and outdoors, at street level, within the defined service area. Using the Delivered Audio Quality representations described in TIA TSB-88B.3, the delivered audio quality throughout the service area shall be no less than DAQ 4.0 for mobile operations and DAQ 3.4 for portable operations.

All references to coverage reliability in this Specification refer to statistical area reliability. For example, the phrase "95% coverage" indicates that the total area described shall exhibit at least 95% statistical probability that coverage areas, if tested, would be found to support electrical performance which equals or exceeds that minimum signal level necessary to deliver Contracted

delivered audio quality, as specified by this Specification and the Contract. However, it will not be acceptable to provide a coverage guarantee which includes a relatively large number of failed points within any single vicinity, while still meeting the overall goal of 95% coverage.

7.3 Building/Residence Coverage

Coverage shall be no less than 95% inside of the listing of representative buildings contained in Attachment C. It is desired that the majority of these building structures shall be supported by the proposed network's fixed infrastructure (tower sites). However, Proposers shall exercise good judgment in balancing the proliferation of costly infrastructure tower sites with the number of building sites Advanced per new installation. The use of building amplifier systems, while necessary in some instances, shall likewise be minimized to the most practical and fiscally responsible extent possible

Proposers shall specifically address those City buildings identified in Attachment C requiring building amplifier systems and shall provide a comprehensive turnkey cost to furnish and install such coverage enhancement equipment on a per-building basis.

If any of these representative buildings fail to demonstrate 95% reliable coverage (DAQ 3.4 Audio Quality per section 7.5), the following procedure will be followed:

A. Measurements will be made from every failed test point to determine if in-building loss exceeds 25dB for that specific test point.

B. If penetration loss exceeds 25dB, that specific test point will be omitted from reliability calculations.

C. If penetration loss is equal to or less than 25dB, that specific test point will remain included in the reliability calculations.

D. After determining which (if any) test points are omitted, reliability calculations will be repeated. At that time, reliability of less than 95% for the structure represents a failure for the building.

If insufficient coverage is identified, the Contractor will be responsible for modifying the system, at no additional cost to the City of Hialeah, as may be necessary to achieve the required reliability within the failed building. This may include any or all of the following approaches:

1. Bi-directional amplifier (BDA) system installed in the building*
2. Passive repeater systems installed in the building
3. Satellite receiver systems in or near the building
4. Modifying/adjusting repeater site antenna systems**

(*Note 1) The determination to utilize a BDA within any structure will be engineered as a part of a comprehensive system design. BDA systems shall not be installed in structures in such a manner or proliferation that creates interference with the overall digital radio network's operation.

(**Note 2) If any changes are made to the fixed sites (such as re-orienting antenna patterns) in order to resolve building coverage failures, then a complete re-test of coverage shall be required at no additional cost to the City of Hialeah.

The Digital Radio Network shall support no less than 95% in-residence portable radio coverage reliability throughout the land area of the City of Hialeah. For the purpose of defining in-residence portable radio loss factors, Proposers shall assume that the typical in-residence structure occupies up to 2,500 square feet and utilizes single-floor, wood-framed brick veneer type construction.

7.4 Propagation Analysis

Proposers, as part of their Proposal Submittal, shall provide a formal statement that the coverage objectives specified in Section 7.1 - 7.3 are met by their proposed solution. ANY exception taken to the specified coverage requirements must be clearly identified with a detailed description of the extent of the exception and the reason for which it was taken, in order for full consideration to be given to the Proposer during the evaluation process.

Proposers shall provide written descriptions of the processes and propagation models used to calculate proposed area coverage objectives.

Coverage maps and other pertinent calculations must be submitted with the following minimum information clearly defined for each map or submittal:

A. Transmitter site power output

B. Antenna gain and type (Include transmission line losses)

C. Effective signal level necessary, at both infrastructure and user radio antenna ports, to produce DAQ 4.0 and 3.4 delivered audio quality in the typical land mobile radio environment

D. Antenna height

E. Portable unit effective radiated power

F. Portable unit effective receiver sensitivity

G. Transmitter site talk out range, individual site as well as composite coverage

H. Portable unit talk-in range, individual receiver sites as well as composite coverage

I. Signal level contours for on-street, in-residence and in-building portable coverage as well as 95% mobile/portable on-street coverage. In-building coverage maps shall depict 15dB, 23dB and 30dB loss profiles.

In addition to the coverage objectives defined herein, the proposed network must be in compliance with the appropriate: State of Florida 700/800MHz Public Safety Radio Communications Plan.

7.5 Coverage Acceptance Criteria

Verification of the installed system's coverage is a component part of the Test and Acceptance criteria described in Section 14.0, Phasing and Implementation.

In order to avoid subjective interpretation of coverage test results to the maximum extent possible, mobile coverage testing (performed within a road vehicle during terrestrial coverage testing or water craft when performing river coverage testing) shall be done with computer-controlled test equipment. This equipment shall automatically record the position of the test vehicle (by means of GPS positioning) at the time of a reading, and records the signal strength of at least 200 signal samples over a 40-wavelength period for each reading taken within a test grid. Signal strength measurements shall be made continuously along the drive route.

Test grid sizes within the City of Hialeah's densely-constructed central business district, and governmental areas shall be no greater than 400ft x 400ft. Grids throughout the other areas of the City shall utilize grid sizes no greater than 2,000ft x 2,000ft. Grids sizes outside the City's boundaries shall be no greater than 4,000 ft. x 4,000 ft. A minimum of 500 accessible grids shall be tested. The City of Hialeah or designee and the Contractor shall mutually determine the size/location of grids and a suitable drive route that encompasses the entirety of accessible grids.

Field strength test results obtained throughout the coverage area, in accordance with minimally required reliability percentages, shall be of sufficient level to produce a Delivered Audio Quality (DAQ) rating of 3.4 (4.0 for mobile radio units) or higher throughout the predicted service area to be considered passing. Mobile radio signal strength measurements shall be made from either a terrestrial (land) vehicle moving at approximately 35 mph, or a water craft (river) vehicle traveling at approximately 20-knots.

The device used to measure field intensity shall be stable and have a dynamic range suitable for the conditions under test. Prior to the execution of these test activities, all test equipment and data gathering equipment to be used shall be fully certified by an independent testing laboratory having calibration tools traceable to the National Bureau of Standards. These certification documents shall be presented to the City of Hialeah's technical staff, or their consultant and/or technical representative, prior to coverage testing for verification.

The test output shall be fed into a laptop computer or an equivalent computer device. The Contractor shall submit a written and/ or graphical report containing an analysis of the test results to the City of Hialeah or designee and Consultant daily, and a formal report at the conclusion of the test. The results shall be depicted for mobile, portable in-residence and portable in-building coverage. The analysis shall include maps of the coverage area divided into grids, with the test results for drive tests displayed in each grid on a separate map. All test data, in its raw form, shall also be made available to the Consultant for independent inspection.

The City of Hialeah or its designee reserves the right to disapprove any instrumentation or procedures. During these tests, the network's simulcast transmitter(s) output power shall be monitored by the City or its consultant/technical representative and no adjustments shall be made

to the transmitter(s), portable/mobile radio units or test instrumentation after appropriate calibration of all involved equipment.

For portable radio voice quality testing, at least 400 grids shall be functionally tested within the defined coverage area. The City of Hialeah's Project Representative, Consultant and Contractor will jointly determine those grid areas to be tested.

From TIA TSB88-A:

DAQ Delivered Audio Quality	Subjective Performance Description	SINAD equivalent intelligibility[1,2]
1	Unusable, Speech present but unreadable	<8 dB
2	Understandable with considerable effort. Frequent repetition due to Noise/Distortion	12 ± 4 dB
3	Speech understandable with slight effort. Occasional repetition required due to Noise/Distortion	17 ± 5 dB
3.4	Speech understandable with repetition only rarely required. Some Noise/Distortion	20 ± 5 dB
4	Speech easily understood. Occasional Noise/Distortion	25 ± 5 dB
4.5	Speech easily understood. Infrequent Noise/Distortion	30 ± 5 dB
5	Speech easily understood.	>33 dB

1 CPC is set to the midpoint of the range.
2 SINAD values are NOT to be used for system performance assessment.

The portable radio voice quality testing shall be performed using a minimum of ten phonetically balanced phrases, to be supplied by the Contractor. A successful test measurement shall be one which requires no repetition to understand the spoken phrase and with a DAQ of 3.4 (4.0 for mobile radio units). A successfully tested grid is defined as one in which communications from a dispatch console to a portable radio unit, as well as for the reverse path, are not less than DAQ 3.4 as described below.

Ninety-seven percent of grids must meet or exceed these defined requirements for the system to be considered coverage compliant.

Audio quality testing within those representative buildings listed in Section 7.3 must be conducted manually, using the voiced procedure described above. Portable audio quality testing for building structures shall be considered successfully completed if of the number of tested areas meeting the previously indicated DAQ audio requirements equals or exceeds 95% of the total number of tested areas. That is, if a hypothetical 100 areas are tested within a given building, then 95 of those tested areas must exhibit audio quality of DAQ 3.4 or greater to be considered acceptable.

The City of Hialeah shall designate the test team to participate in coverage testing. The team shall include, at a minimum in each team, a Consultant representative, a Hialeah staff person, two Public Safety representatives and a Contractor representative. All test vehicles shall be provided by the Contractor and be off-road capable. Testing shall commence daily at 9 AM and will cease at 5 PM. At least two teams will conduct the tests in the interest of timely completion. Failure of Contractor test equipment shall not be considered as an acceptable reason for a Contract time extension. The City of Hialeah will not pay for retesting caused by delays or equipment failures. Testing will proceed through weekends until concluded.

Final System Acceptance shall not be achieved until the constructed radio network successfully concludes performance test requirements the as-built radio network equals or exceeds the coverage performance guaranteed by the Successful Proposal or as otherwise amended by the Contract.

8.0 Dispatcher Console Requirements

8.1 General

It is a functional requirement that the existing 800MHz trunked analog systems remain operational during the installation and acceptance phases of the new Project 25 Digital voice radio network. Any proposal that would cause the temporary interruption of the existing radio system for any duration must be reviewed and approved, in advance, by the City of Hialeah or their designee. The City currently uses the Gold Elite dispatch console. They are satisfied with its reliability and performance, and will be the benchmark upon which any replacement console is judged.

It is the desire of the City to replace their existing dispatch console and have seamless integration with the newly proposed P25 800MHz radio network. For those proposals that incorporate the replacement of the existing dispatch console with a proprietary console solution, careful consideration must be given to the cost benefits of replacement, functionality of newly proposed dispatch console when compared to the existing console, future warranty costs and vendor support. Proposals that do not provide a pathway for integration of the existing console solution shall provide a cost and functional comparison of the existing console solution with the newly proposed dispatch console solution. Such cost and functional comparison shall provide adequate justification to the City for replacement. Additionally, any newly proposed console shall be seamlessly compatible with the City's existing Voice Print audio logging recorder manufactured by Replay Systems. This system has 72 channels of which 67 are currently used to record phone lines and radio talk paths.

Installation of new radio dispatcher equipment must, likewise, be completed in a manner that causes no interference with the operation of the existing 800MHz trunked conventional systems. Therefore existing dispatch facilities for Police and Fire operations must be evaluated by Proposers to determine the most effective means to install and implement their proposed new dispatch console equipment and associated subsystems.

Note: All consoles, wherever located shall be properly and adequately grounded and surge protected to industry standards for operator safety.

8.2 Radio Console Locations

8.2.1 The City of Hialeah E911/Dispatch Center

The City of Hialeah Police Department and Fire Department dispatching facilities are located at the City of Hialeah E911/Dispatch Center at Fire Department headquarters. The address of the E911/Dispatch Center is:

Hialeah E911/Dispatch Center
83 E 5th Street
Hialeah, FL 33010

The main Public Safety Answering Point (PSAP) is a single room, separated into functional dispatch positions by cubical dividers, and provides service for City Police and Fire operations. A total of twelve radio dispatcher consoles shall be provided - seven at the main dispatch center and five at the backup dispatch center.

The backup E911/Dispatch Center is located at the Police Department:

Hialeah Backup E911/Dispatch Center
808 E. 56th Street
Hialeah, FL 33010

Each dispatcher position shall be equipped to selectively monitor and control any combination of talk groups, NPSPAC mutual aid, and interoperability radio channels. Additionally, dispatch consoles must have the capability of establishing and/or disabling dispatcher-controlled RF/audio interoperability service links as described in Section 3.2.6.

For each dispatcher position, all CPUs, monitors, speakers, headsets, footswitches and associated equipment will need to be replaced with new equipment.

The display equipment at each dispatcher position must be of a compact, solid-state liquid-crystal design (19-inch minimum) and capable of presenting a real-time alphanumeric display of pre-configured talkgroups, call status, and per-call user identification.

Each supervisory dispatch console position shall have the capability to monitor and control pre-configured talk groups, NPSPAC mutual aid channels, and dispatcher-controlled interoperability links. In addition, this console position shall be equipped to perform, at a minimum, the following system management tasks:

A. Emergency unit identification in real time.

B. Retrieval of system activity i.e. the types of calls, call duration, when made, user identification, etc.

C. Retrieval of special feature activity, i.e. interconnect usage, encrypted voice transmissions, etc.

D. Ability to remotely disable and re-enable selected field units.

E. Ability to regroup individual radios into special talk groups.

F. Assignment of user priority levels.

G. Ability to monitor summed major site/network alarm status.

The supervisory console position shall be equipped with solid-state liquid crystal flat screen monitor(s) to display real-time transactions at each dispatcher position and the system management

information described above. Additionally, printer equipment shall be provided to prepare hard copy reports of accumulated system records.

8.3 Desired Functionality 8.3.1 Dispatch Console Reliability

Due to the critical nature of the communications services provided by these multiple public safety dispatch facilities, a high degree of reliability for the new radio dispatch console subsystem is required. The console subsystem, to the greatest extent possible, shall:

A. Be automatically self-correcting.
B. Provide continuous and automatic self-testing and diagnosis.
C. Alert the operator in the event of component or sub-system failure.
D. Allow continued operation of the remaining consoles in the event of failure to a specific console, through isolation of the defective console device.
E. Be of a design that eliminates single points of failure.
F. Interconnectivity between consoles and dispatch locations shall utilize to the greatest extent possible packet-based, in lieu of traditional circuit-switched, technologies

A high degree of modularity is likewise envisioned to reduce the number of sub-systems affected by a single component failure. Repair of sub-systems without totally disabling multiple radio console positions shall be required, as continued console operation is necessary during repair.

8.3.1 Diagnostics

The new dispatch console subsystem shall be equipped with a number of self-diagnostic elements that continuously monitor and verify the correct operation of each distributed microprocessor, each audio path in the console electronics and between the console electronics and the new radio network, itself.

Diagnostic capability shall be distributed among independent and redundant subsystems and shall not rely on one central diagnostic circuit.

8.3.2 Power Supply

It is a critical requirement that power loss or surges shall not affect radio dispatch operations. Power loss or surges shall not alter the system software or operating parameters at the radio dispatch positions. External power to each console shall be supplied by a nominal 120VAC, 60Hz, single-phase power source. An existing uninterruptible power supply, capable of supporting consoles, fallback radios and related equipment for a minimum 45-minute period is already provided at both dispatch centers. All dispatch console equipment, in whatever facility, shall be connected to an outlet on a circuit that is protected by a UPS and supported by the existing 15kW emergency power generator. It is not the responsibility of the Proposer to supply battery backup, emergency generator, or the designated circuits at the primary E911/Dispatch Center but is otherwise required at the other locations.

8.3.3 Flat Panel Display

A state-of-the-art color, non-interlacing, 19-inch minimum display shall be provided. Each operator shall have the ability to change screen displays to suit operator preferences. No less than eight console preferences shall be configurable for each console.

8.3.4 Headset Jack Configuration

All radio consoles shall, at a minimum accommodate both right-handed and left-handed operators and shall be configured for headset and local microphone operations. Each console shall provide independent transmit audio level settings for audio inputs from the headset microphone and a desktop microphone, such that dispatchers may freely switch operation without affecting dispatch audio quality. Dual headset jacks shall be provided at each position for training and supervisory purposes.

8.3.5 Footswitch

Each of the radio consoles shall include a footswitch for PTT operation of the selected channel(s). The footswitch shall be heavy duty, rated for constant and continuous use, and shall be designed so as not to skid on a smooth flooring surface. The Contractor shall supply and install a switch for each console.

8.3.6 Master Time Source

A time generator system shall be provided, by the Contractor that references the Global Positioning System to synchronize all dispatch, CAD and audio recorder clocks at all radio console positions/centers. This time generator system shall be made to fully interface to and control the event-time display of the radio consoles, console audio recorder, radio network management tools, radio network alarm system, microwave alarm system and CAD systems at each radio dispatch location. This time generator shall have an adequately sized UPS, connected into an emergency powered circuit outlet.

8.3.7 Dispatch Console Positions

Each of the radio dispatch consoles shall include all controls that apply to the various channel/talk groups and auxiliary functions for the console. Each console position shall contain as a minimum:

- Select Speaker – for audio from selected channels/ talk groups, with volume control.
- Unselect speaker – for audio from unselected channels/ talk groups, with volume control.
- Transmit Function – a color-coded transmit function to control the push to talk (PTT) function for the selected transmitter(s) and/ or talk group(s).
- CTCSS Monitor or Disable Function – shall disable the receiver CTCSS decoder of selected conventional base station(s) operating on conventional channels for monitoring purposes.

- Clock – shall display time in twenty four-hour format and shall be synchronized with the time server.

- VU Meter or Audio Level Display.

- Keypad or screen representation of a keypad for numeric data entry.

- Microphone – desktop microphone type. This microphone shall be resistant to interference, such as transmitting hum for lights, cathode ray tube terminals, or other devices used in the proximity of the console.

- Dual Headset Jack – a dual headset jack shall be provided which will allow for use of a headset equipped with RJ-327 type plug with modular adapter. Separate headset volume controls for radio and telephone audio output shall be provided.

- Intercom – intercom between operator positions shall be provided. A visual display shall be provided to identify both the calling and called parties by console name. Multiple simultaneous intercom conversations between individual consoles shall be possible.

- Private Call – Selected users and dispatchers shall have the ability to selectively communicate "privately" with another individual on the system regardless of what talk group either unit is in. The call shall allow the two users to utilize a single channel resource to communicate without the participation of other units in their respective talk group.

- ID Display on the channel window for standard calls and emergency calls with a minimum of 8 alphanumeric characters.

- All Receiver Mute Function – a function, which will mute the received audio from all unselected channels, shall be provided. This muting function shall be programmable in predetermined increments.

- Simultaneous Select and Instant Transmit Function – controls shall be provided that allows the operator to manually select any combination of console controlled base stations for simultaneous transmissions. Three selectable combinations shall be allowed at the discretion of the dispatcher. The patch shall utilize a single trunked channel when patching more than one talk group.

- Emergency/ Reset – consoles shall receive emergency alerts from the trunked radio system regardless of the status of the channel control window. Emergency messages shall be indicated by a flashing ID, and emergency ID character and an audible alert. Dispatcher acknowledgment of the message shall silence the audible alert and stop the flashing display. Multiple emergency messages shall be queued in the display stack and the emergency ID character shall continue to flash until all messages have been viewed and subsequently cleared by the dispatcher.

- Alert Tones – the console shall be provided with three distinct tones used for alerting purposes over the air. Each alert tone shall be immediately broadcast, when activated, on the selected radio channel. The following selections shall be available as a minimum:

A. Alert 1 – Steady Alert Tone – shall generate a nominal 1000 Hz steady tone.

B. Alert 2 – Warbling Tone – shall generate a warbling tone.

C. Alert 3 – Pulsed Alert Tone – shall initiate an automatic sequence, consisting of a nominal 1000 Hz tone, for a period of two (2) seconds.

- Paging Encoders – Each console shall include a multi-tone paging/ signaling encoder that is accessible, minimally, through the data entry keyboard.

- Call Indication – a color-coded status call indicator shall be provided for each receiver in a channel control window on the display screen.

- Individual Volume Adjust – shall be provided for each channel on the console. Associated color-coded status indicators shall continuously show whether the channel is in the full or adjustable volume control shall be automatically bypassed when a channel is placed in select status.

- Talk group/Channel Cross Patch

- Channel/Group Name – designated channel/ group control modules shall include a minimum of eight character alphanumeric display symbols to identify the channel/group.

- Talk Group/Channel Busy Indication

8.3.8 Video Display Installation

The installation of the Video Display(s) used for the radio dispatch positions shall be desk mounted on furniture provided by Hialeah. Contractor furnished cabling shall be installed in a neat manner, which is approved by Hialeah and protected from physical damage. Cable raceways shall be used where possible. No cabling shall create a safety or mobility problem for dispatch personnel.

8.4 Console Electronics 8.4.1 Description

Console electronic circuitry shall be housed in an equipment rack/ enclosure specific for each dispatch console position. When installed by the Contractor, sufficient space for front and rear servicing of this equipment shall be provided. The use of a centralized console electronic bank that supports audio and control signaling between multiple dispatch console positions is discouraged.

Console electronic enclosures shall contain the various microprocessors, console interfaces, auxiliary function interfaces and other interfaces needed for system operation. If multiple circuit cards are required in the Proposer's solution, these shall be of plug-in design and shall be able to be inserted and/or removed with power applied and the location's dispatch positions/equipment remaining on-line.

8.4.1 System Interfaces

The digital voice network's radio dispatch subsystem shall include that circuitry required to operate remotely-controlled base stations and the trunked simulcast repeaters as described by this Specification and in the Proposer's Submittal. At a minimum, each base station interface shall consist of a plug-in circuit card (or the software equivalent) containing VoIP-related circuitry, line driver amplifiers, two-wire and four-wire receive amplifiers, digital automatic level adjustment circuitry and fault-diagnostic circuitry. The interface shall be capable of remotely controlling base stations via E/M multiplex-channel and 2175Hz tone-burst signaling.

8.4.2 Auto Diagnostics/Self-Healing and Diagnostic Features

The radio dispatch subsystem shall be equipped with a number of self-diagnostic capabilities that shall be configured to continuously monitor and verify the correct operation of each distributed microprocessor, each audio path in the console electronics and between the electronics and each radio network base station site. In the case of voice transactions using the Internet Protocol, specialized coding shall be used to assure the timely delivery of audio packets to destinations such that recovered or transmitted audio is absent of noticeable voice delays or audio truncation.

8.4.3 Console Auxiliary I/O Functions

Unless otherwise specified within this document, all external auxiliary input and/or output (logic or relay) functions shall be controlled through an auxiliary interface module. These functions shall be controlled from the console position as required.

8.5 Fallback Control Stations

Each dispatch and supervisory position shall be equipped with a 800MHz trunked control station to permit radio dispatch operations to continue in the event of radio console equipment or connectivity failures. These control stations, in addition to the minimum requirements specified by Section 5.3, must contain an alphanumeric display to provide information on talk group selection and emergency call alerts.

9.0 Special System Requirements

9.1 Generator Equipment Requirements

A standby power generator system shall be furnished by the Contractor for Site #4 only. For reuse of the existing standby power generation equipment at the other three sites, the Proposer shall insure that the loading capacity and functionality of existing equipment will meet and/or exceed the power and run time requirements of any newly proposed standby power generation equipment as outlined below.

For the newly proposed infrastructure site, Site #4, the Proposer shall include the necessary labor and materials, as required, to furnish and install diesel fuel tanks, automatic transfer switches, manual-operated auxiliary generator connector facilities, generator/fuel tank foundations/platforms, alarm functionality and electrical wiring services to provide fully operational standby power systems. The generator shall be housed within an outdoor equipment enclosure in accordance with the manufacturer's specifications for shock and vibration mounting, ventilation, fuel supply and electrical connections.

9.1.1 General Requirements

It shall be the responsibility of the Contractor to provide, install and test a complete and operable standby power generator with automatic transfer switch. Equipment shall be new, factory tested at 0.8 power factor for 3-hours, and shall be installed adjacent to the required radio equipment shelters, in accordance with local area building and electrical codes.

9.1.1.1 Documentation

The following documentation shall be supplied by the Contractor for the generator set and transfer switch supplied:

- Specification and data sheets for the exact type and model generator and transfer switch supplied pursuant to this procurement, including all options and accessories included.
- Manufacturer's certification of prototype testing.
- Manufacturer's warranty documents.
- Shop drawings showing plan and elevation views of the equipment.
- Interconnection wiring diagrams showing all external connections required; with field wiring terminals marked in a consistent point-to-point manner.
- Manufacturer's installation instructions.
- Operator's and maintenance manuals that outline routine maintenance and troubleshooting procedures.

- Transfer switch manual and wiring diagram.

9.1.1.2 Start-Up Service

A factory authorized service representative shall provide initial start-up service and shall conduct on site acceptance testing. Load test records for the installed generator system shall be furnished to Hialeah.

9.1.1.3 Type of Generator

The generator package shall include a diesel engine (2 or 4-cycle) with a tank underneath the generator, engine-driven set coupled with low reactance, brushless 120/240vac single-phase generator. The generator package shall be equipped with a temperature compensated automatic voltage regulator; under/over-speed protection function; a control panel; and high ambient-temperature cooling system.

9.1.1.4 Ratings

Output power rating of the generator shall be sized for the full calculated load for the affiliated site, inclusive of a 50% excess load factor. In no instance, however, shall the generator be configured for less than 45KW output. The generator shall also be capable of continuous 24-hour operation, full single phase output at 1.0 pf. The following specifications shall also apply:

Voltage Regulation: Maintained with +/- 2% of rated voltage for constant load between no load and full load.

Frequency Regulation: Maintained within 0.5% from steady state no load to steady state rated load.

Single-Step Load Pickup: 100% of rated output power, less applicable derating factors, with the engine generator at operating temperature.

9.1.1.5 Generator Set Control

The generator shall be a remote-start type compatible with the automatic transfer switch to be supplied pursuant to this procurement. Manual starting and stopping shall be provided from the control panel.

Cranking control: Shall provide a minimum of three cranking cycles of at least 15-seconds before lockout and activation of an over-crank alarm condition.

The generator shall automatically shut down and lock out upon:

Failure to start (over-crank)
Over speed
Low lubricating oil pressure
High engine temperature

Other factors that may be harmful to the generator

Alarm contacts shall be provided to allow transmission of fault alarms for any of the above conditions, plus low oil pressure pre-warning, high coolant temperature pre-warning, low coolant temperature, low fuel and an alarm indication when the generator set is running. These alarm contacts shall be wired into and shall be reported by the radio network alarm system being supplied pursuant to this procurement.

Meters shall be provided, and located both at the generator and within the equipment shelter, to indicate output voltage, output current, running time, and frequency/RPM. An AC rheostat shall be supplied for fine tuning of the generator's output voltage. These devices shall be mounted either on the transfer switch door or a separate, remote panel.

9.1.1.6 Fuel Supply

The Contractor shall supply a new, fully painted, diesel storage tank to be installed and secured to a concrete pad at a location near the equipment shelter and which is accessible for refueling. In some instances, depending upon local conditions, Contractor shall be required to elevate the fuel tank as necessary (depending upon Contractor's flood determination, to a height equal to the equipment shelter. The fuel tank shall provide sufficient fuel to provide six days of continuous operation of the generator set, at full load under low ambient temperature 20-degrees Fahrenheit). The tank shall be refilled after the conclusion of radio network acceptance tests.

Fuel lines shall be buried below the frost line. At any point at which the fuel line exits above grade, the line shall be insulated to reduce condensation at the regulator. A low fuel level alarm shall be provided.

All regulators and fuel supply lines will be sized accordingly for the generator running at full load. All necessary regulators, drip pots, piping, meters, or other supplies needed for an installation which meets local fire and building codes shall be furnished and installed.

Contractor shall supply a full fuel tank at time of System Acceptance.

9.1.1.7 Exhaust System

A residential-grade exhaust silencer shall be installed on the generator.

9.1.1.8 Battery and Charger

A lead acid starting battery, rated for the engine type to be supplied, shall be furnished and installed with the generator package. This battery shall be float charged by a 10-ampere, voltage-regulated charger which is powered by a protected 120VAC source. Float, taper and equalize charge settings shall be provided. Battery charger shall be physically located within the generator transfer switch enclosure.

Form-C charging system alarm contacts shall be provided and connected to the radio network's alarm system to report loss of AC power, low battery voltage and excessively high battery charging current.

9.1.1.9 Cooling System

A radiator-cooled engine is required. The radiator shall be filled with a water/coolant mixture in accordance with the engine manufacturer's recommendations.

A thermostatically-controlled water jacket coolant heater shall be provided and installed in accordance with the manufacturer's recommendations.

9.1.1.10 Base

The generator set shall be mounted on a heavy duty steel base which is, in turn, anchored to a Contractor-furnished generator foundation. The base shall maintain alignment between generator set components and shall include vibration isolators.

9.2 Transfer Switch Requirements

An automatic transfer switch which provides switching of the equipment shelter electrical load between commercial power and generator power shall be supplied and installed for each installed standby generator. Each transfer switch shall be completely factory assembled and shall contain electronic controls designed for surge voltage isolation, with voltage sensors on all phases of both input power sources. Permanently attached manual handles shall also be installed on the transfer switch. The switch shall provide positive mechanical and electrical interlocking and mechanically-held contacts. Quick-make and quick-break contact mechanisms shall be provided for manual transfer under load.

Each transfer switch shall be installed in a key locking, UL listed, NEMA rack to be mounted on a wall within the radio equipment shelter. The switch shall be fully wired and integrated with the engine generator set in accordance with local electrical and fire codes.

A manually-operated transfer switch, as well as appropriate power connectorization, shall be provided to allow the interconnection of an auxiliary, trailered generator set should the permanently-located generator fail in operation.

All transfer switches and accessories shall be U.L. listed and labeled, tested per U.L. Standard 1008 and CSA Approved.

9.2.1 General Specifications

Transfer switches shall be double-throw electrically and mechanically interlocked and mechanically held in both positions.

Main switch contacts shall be high-pressure silver alloy. Contact assemblies shall have arc chutes for positive arc extinguishment. Arc chutes shall have insulating covers to prevent inter phase flashover.

Form-C contacts shall be provided in each main switch position for alarm reporting purposes. These contacts shall be connected to the radio network's alarm system for reporting transfer status.

Each transfer switch shall be continuously rated for operation in ambient temperature ranges of -40 to +50 degrees Celsius. Transfer switches shall be rated, minimally, to carry the generator's full rated output, inclusive of the 50% added capacity over calculated equipment loading.

The Line-In, Generator-In and Load site termination for the automatic transfer switch shall be protected from lightning transients using a combination of MOV and varistor technologies. All alarm and instrumentation wiring from the generator, that enters the equipment shelter, must likewise include appropriate lightning surge protection in the form of solid-state, fast-acting voltage clamp devices whose clamping voltage is closely matched to normal individual-alarm signal amplitudes.

9.2.2 Automatic Control

Transfer switch control shall be solid state and designed for a high level of immunity to power line surges and transients. The device shall be tested in accordance with IEEE Standard 587-1980 (or latest revision). Controls shall have optically isolated logic inputs, and isolation transformers for AC inputs. Relays shall be installed on all outputs.

Solid state under voltage sensors shall simultaneously monitor all phases of the standby power source and the commercial power source. Pick up and drop out voltage settings shall be adjustable. Voltage sensors shall allow for adjustment to sense partial loss of voltage on any phase.

Controls shall be provided with solid state over voltage sensors, adjustable from 100-130% of nominal input voltage to monitor the source. An adjustable time delay shall be provided.

Automatic controls shall signal the engine generator to start upon signal from normal source sensors. A time delay start, variable from 0 to 5 seconds, shall be provided to avoid nuisance startups. Battery voltage starting contacts shall be gold, dry type contacts which have been factory wired to a field wiring terminal block.

The switch shall transfer when the emergency source reaches the set point voltage and frequency. A time delay shall be provided for transfer that shall be continuously variable from 0 to 120 seconds.

The switch shall retransfer the load to commercial power after a time delay. This time delay shall be variable (adjustable) from 0 to 30 minutes to avoid short engine run times. The retransfer time delay shall be immediately bypassed if the emergency generator fails.

A control shall automatically signal the engine generator to stop after a time delay, which shall be adjustable from zero to ten minutes, the time starting upon return to commercial power.

Power for transfer operation shall be from the source to which the load is being transferred.

Diagnostic indicators shall be provided to allow the last successful step in the sequence of control functions to be pinpointed. The present status of the control functions shall also be indicated. These functions, at a minimum, shall include:

Source 1 OK
Start generator set
Source 2 OK
Transfer timing
Transfer complete
Retransfer timing
Retransfer complete
Timing for stop

9.2.3 Front Panel Control Devices

A key-operated selector switch shall be provided which will provide the following functions:

Test - to simulate commercial power loss to allow testing of the generator set with or without transfer of the load.

Normal - leaves the transfer switch in its normal operating position.

Retransfer - a momentary position which will provide an override of the retransfer time delay and cause immediate return to the commercial power source (if available).

9.2.4 Exerciser Clock

Each transfer switch shall be equipped with an exerciser clock which allows setting the day, time and duration of a generator set exercise/test period. Tests under load or with no load shall be selectable.

10.0 Equipment Shelter/Tower Requirements

10.1 Shelter Design Considerations (Site#4 - Annex Site Only)

10.1.1 Equipment shelters shall be of a skid-mounted, bullet-resistant, prefabricated concrete aggregate type designed to house radio communications and sensitive electronic equipment.

10.1.2 The interior wall measurements shall be no less than 10ft high, 10ft wide and 20ft long. Exterior dimensions shall include nominal wall, roof and skid dimensions, to be determined by Proposer.

10.1.3 Equipment shelters must provide an interior climate suitable for the operation of sensitive electronic equipment, that is, it must be dust proof, watertight and airtight.

10.1.4 Each equipment shelter shall be supported by a concrete pad with attachment devices appropriate for securing the building assembly to survive hurricane force (no less than 120-mph) winds. In the case of sites determined by the Contractor as requiring elevation due to potential flooding, the affected equipment shelter shall be set on poured concrete piers. The finished length of piers shall extend, minimally, four feet above ground level but otherwise in accordance with Contractor's calculated flood plain elevation plus a two-foot contingency margin. The flood plain data shall be 100 Year data for the location.

10.1.5 Skid components, attachment hardware, cross-braces and lifting eyes shall be hot-dipped galvanized after fabrication.

10.1.6 Shelters shall be designed to withstand sustained hurricane force winds not less than 120-mph.

10.1.7 The exterior wall finish shall be exposed aggregate. Seeding of aggregate for an exposed aggregate finish is not acceptable. Exterior walls must be bullet proof as defined below.

10.1.8 The roof shall be a flat, tapered type having a minimum slope of 1/2" per foot from the roof centerline.

10.1.9 All exterior wall, floor and roof joints shall be sealed using a compressible, resilient sealant. There shall be no exposed roof-to-wall or wall-to-floor joints.

10.1.10 Cement used in concrete shelters shall be standard Portland cement conforming to the requirements of the "Standard Specification of Portland Cement", ASTM Designation C150. Concrete aggregate shall conform to the requirements of the "Specifications for Concrete Aggregates" ASTM C33 and "Specifications for lightweight aggregates for structural concrete" ASTM C330.

10.1.11 Exterior concrete surfaces shall be sealed with a minimum of two coats of Thoroglaze H Sealer or equal.

10.1.12 The shelter's interior floor shall be covered with 1/8" x 12" x 12" industrial weight solid vinyl floor tile. Floor color shall be light beige.

10.1.13 Walls shall have a minimum thermal insulation factor of R11.

10.1.14 The shelter's roof shall have a minimum thermal insulation factor of R19. 10.1.15 Interior wall surfaces shall be faced with white vinyl/coated wood paneling.

10.1.15 The interior ceiling surface shall be a white, vinyl coated plywood. Seams in the plywood shall be trimmed with batten strips painted to match the ceiling.

10.1.16 Building openings for the door, air-conditioners, transmission line entrance and other entries shall be framed and sealed in such a manner that moisture cannot penetrate the insulation within the walls or the interior walls of the structure.

10.1.17 A single 36"W x 72"H x 3" thick insulated bulletproof steel door, equipped with a three-point latch shall be provided. All door hardware shall be stainless steel and incorporate three external hinges. Door shall open outward to maximize internal building utilization.

The term 'bulletproof" is defined, for this Specification, as unable to be penetrated by a .3006 or .308 commercial cartridge firing a lead tipped, 160-grain projectile, at not more than 2600 fps muzzle velocity. The projectile will be test-fired at a range of 100 yards. The structure/material must not be completely penetrated at that distance.

10.1.18 Stainless steel reinforced, fiberglass coated exterior awnings shall be provided to protect the door entrance and air-conditioner units.

10.1.19 All hardware used on the exterior surfaces of this shelter shall be either hot-dipped galvanized or stainless steel.

10.1.20 Wafer or particleboard wood products are not an acceptable construction material for this project.

10.1.21 Contractor shall provide detailed fabrication drawings for the pier concrete foundation, designed to adequately support the proposed building structures and wind loads. Additionally, the building frame shall be mechanically bonded to the concrete foundation. The generator and fuel tanks shall be similarly elevated for protection against rising water effects, if building locations are flood prone. Fuel tanks shall be restrained from floating and must be secured with adequate metal straps and anchors to prevent buoyancy of a tank of the required capacity at a 95% fuel empty status. Strapping and anchor materials shall be hot-dipped galvanized protected.

All building and foundation detail drawings and related calculations must be reviewed and approved by a Florida Licensed Professional Engineer.

All newly proposed construction (building and tower) shall conform to local, municipal and state requirements. This includes, but is not limited to a GPS Survey, FAA Study, Engineering Tower

Design, Building Design, Land Survey, Structural Analysis, Site Layout, Construction Drawings, Environmental and Endangered Species Study, Archeological Study, Indian Burial Ground Study, US Fish and Wildlife Study, Wetlands Study, and State Historical and Museum Commission Study.

10.2 Shelter Electrical Requirements (All Sites)

10.2.1 Each shelter shall be equipped with overhead cable trays located above all planned equipment rack groupings. Auxiliary cable trays shall be provided to support transmission lines and telecommunications cables, as necessary. All cable tray joints shall be electrically bonded using #6 AWG copper wire jumpers with approved compression fittings. Trays shall be bonded to interior grounding system.

10.2.2 Individual, properly grounded 120VAC, 20A electrical circuits shall be provided to each of the equipment racks/racks. Each shall be terminated as a single, duplex outlet mounted on the cable tray directly above the center of each planned equipment rack.

10.2.3 Individual, properly grounded 120VAC, 30A electrical circuits shall be provided for each battery charger unit. Sufficient flexible conduit shall be provided above the rack to permit interconnection to chargers located at the bottom of the rack.

10.2.4 DC wiring for the radio network's battery plant and interconnection to the various equipment groupings shall be furnished and installed, as required.

10.2.5 Two 240VAC electrical circuits shall be provided for the HVAC system. Sizing of these circuits shall be determined by the Proposer.

10.2.6 Install six quad 120VAC convenience outlets equally spaced along interior walls. A total of three 15-ampere circuit breakers shall be provided (two quads per breaker).

10.2.7 Furnish and install a 120/240VAC automatic generator transfer switch and diesel generator set, per Section 9.2, Generator Equipment Requirements. All circuits and outlets for all equipment installed in the shelter shall be on the Emergency power system

10.2.8 The Contractor shall furnish and install one circuit breaker panel board. Panel board shall be sized for all of the indicated branch circuits, equipment loads plus a 55% growth factor.

10.2.9 The Contractor shall furnish and install an interior and exterior electrical ground halo and power surge protection for each location, as follows:

A. A single #6AWG stranded copper wire conductor ground halo shall be installed on all four interior walls, spaced approximately six-inches below ceiling level.

B. Ground halo shall be mounted on six-inch standoffs, located on twelve-inch centers. It shall be affixed to the transmission line ground entry port, buss bar.

C. All equipment racks, racks, transmission line entrance and cable trays shall be individually bonded to the halo using #6AWG copper conductors with approved compression fittings.

D. Interior halo shall be bonded to an exterior, buried ground network using low impedance copper conductors.

E. Electrical lightning protectors shall be Polyphasor model IS-IL 240BP or equal.

F. A single, #2AWG solid tinned copper wire exterior ground system shall be installed about the building and tower perimeter, located approximately 18" below grade and exothermically bonded to the building frame, interior halo, transmission line ladder, generator system and radio tower legs. All grounding shall meet a required 3 Ohms or less. All grounding practices and methods shall be in accordance with either the Harris AE/LZT 123 4618/1 R3A, Motorola R56, or a pre-approved equivalent standard.

10.2.10 Install as many 4-foot, fluorescent T8 bulb light fixtures as necessary to provide effective illumination for each equipment rack, and emergency exit and interior lighting as required by fire code. Exterior lights above the door and area lights on each of the exterior shelter corners shall be controlled by at a maximum of two light switches located just inside the door opening on the side away from the hinges at shoulder height.

10.3 HVAC Requirements [Site #4 - Annex Site Only]

10.3.1 The Contractor shall furnish and install a dual, wall-mounted heating and air-conditioning system appropriately sized for each shelter/equipment heat load. Each HVAC unit shall incorporate circuitry to ensure that both compressors do not attempt to restart at the same time. There shall be timer circuits to rotate use of the air conditioner units on a weekly basis. Additionally, sensors may cause both air conditions to run simultaneously as needed to reduce the internal temperature to a safe operating level.

10.3.2 Equipment shall be furnished with compressor anti-cycle circuitry to prevent short-cycle starts against high compressor head pressure.

10.3.3 Equipment shall be furnished with a compressor hot gas bypass to minimize electrical power surges as a result of compressor cycling.

10.3.4 Design of HVAC system shall take into consideration the following environmental

Desired Interior Temperature:	72 degrees F
Maximum Outdoor Temperature:	98 degrees F
Minimum Outdoor Temperature:	10 degrees F
Transmitter Power Dissipation:	5,000 watts
System Controller:	850 watts
Battery Charger/Inverter:	2,000 watts
Lighting:	650 watts (Intermittent)

10.3.5 Buildings shall incorporate a thermostatically controlled fan system designed to operate in the event of a total HVAC failure and where the building's interior temperature exceeds 98°F. This system shall incorporate appropriate dampers, screens and filters to limit dust and insect entry into the building.

10.4 Alarm Systems

10.4.1 The Contractor shall furnish and install an over/under temperature sensor, continuously adjustable over the range of 30°F to 98°F, having independent Form-C output contacts suitable for high/ low temperature alarm activation.

10.4.2 The Contractor shall furnish and install a door entry alarm sensor, magnetic type, having a Form-C contact closure output (except for Site#3 – Bucky Dent Site which already has a door entry alarm).

10.4.3 The Contractor shall furnish and install a single-loop smoke/ fire alarm system.

10.4.4 Smoke/fire alarm sensors shall be mounted above battery charger equipment, and in vicinity of AC power distribution panel board.

10.4.5 Smoke/fire alarm panel shall have visual indicators depicting individual alarm sensor status.

10.4.6 Smoke/fire alarm panel shall operate from both 120VAC and 12VDC battery power sources.

10.4.7 All shelters shall be equipped with an inert gas fire suppression system (FM 200 or similar) that is environmentally approved and not injurious to communications staff. The system shall be connected to the communications and shelter fire/ smoke system alarms. Trigger of the system causing a gas discharge shall cause the air conditioners to automatically shut off. The air conditioner units must be manually restarted to purge the shelter of the gas, after all evidence of combustion is resolved. All necessary plumbing and overhead dispersal equipment shall be provided. The system shall have modes for test and maintenance that do not trigger activation. The system shall be installed and delivered with a primary tank, on line and a spare, full tank, off line. In the event of a discharge during testing by the vendor, the City of Hialeah shall not be responsible for replacement or refill of the system. Refill of the system primary tank, by the vendor, due to an actual event, the spare tank shall be placed in line and the discharged tank shall be refilled and returned as the spare within 48 hours by the vendor.

10.5 Tower Requirements (Site#4 - Annex Site Only)

10.5.1 The basic standard for the design of newly required steel antenna towers, wave guide bridges and supporting structures, shall be TIA-222-G or latest version.

10.5.2 The tower shall be a self-support tower having an overall height to be determined by the Proposer, based on the requirements of area coverage and availability of clear Microwave paths for site connectivity.

10.5.3 The tower shall be designed for a minimum sustained wind speed and ice load based on location according to TIA-222-G, with the full complement of necessary antennas and required lights and other Federally-required equipment. Proposal must take into consideration any current antennas that must be retained by the City for other communications needs

10.5.4 Antenna loads shall be as determined by Proposer, however, the design shall include a minimum 30% growth factor.

10.5.5 All fabricated tower assemblies and parts shall be hot-dipped galvanized after fabrication per ASTM Standard A123. Hardware shall be galvanized per ASTM Standard A153 and B695. Other types of zinc coating or plating are not acceptable.

10.5.6 The tower shall be supplied with a full length transmission line ladder designed to accept all transmission lines needed for the proposed design plus a 50% growth factor.

10.5.7 The tower shall be equipped with an outside climbing ladder/cable type climbing facility and the Obstruction Lighting System (OLS) shall be a Flash Technology FTB 324 lighting system to meet OSHA and FAA requirements, respectively.

10.5.8 Antennas, tower top pre-amps and transmission lines as specified by the licensed frequencies and system design, shall be provided and installed by the Contractor.

10.6 Tower/Site Grounding Requirements (All Sites)

10.6.1 The Electrical Grounding Systems at each site, existing and proposed, must meet industry standard, as specified above, and shall be furnished and installed by the Contractor in accordance with either the Harris AE/LZT 123 4618/1 R3A, Motorola R56, or pre-approved equivalent standard and the following minimum practices. The grounding systems at the existing towers/sites (Fire Department, Police Department and Bucky Dent) may need to be upgraded to meet these standards.

- Install a ground ring around the base of the tower, consisting of 10' x 5/8" cooper clad ground rods driven to a depth necessary to meet the required resistance measurement of the specifications, adjacent to the foundation of the tower at each leg. Ground rods are to be interconnected by a minimum #2AWG solid tinned copper wire, which is Cadwelded to each top most ground rod. Copper wire and ground rods are to be installed in a trench of a minimum depth of 18-inches below finished grade. Spacing between rods shall be according to specifications, but no greater than 15-feet. Each tower leg shall be bonded to the ground ring by #2AWG solid tinned copper wire, which has been Cadwelded to the factory provided tab, manufactured onto the tower leg and to the closest ground rod, avoiding any acute bends in the wire. At the completion of the Cadwelding process, the welded area shall be resealed with a cold galvanizing compound.

- The ground rod/ring system shall extend around the perimeter of the equipment shelter, transmission line copper entrance port into the shelter and to the perimeter fence.

- Bond all transmission line outer shields to the structure at the top of the tower immediately below the antenna pig tail, midpoint if the tower is over 200-feet tall, and at the bottom section of the tower at a point one foot above the bend made in the line to attach it to the Waveguide Bridge and at the copper plate at the entry port into the tower.

- Fencing shall be grounded to the ground ring via #2AWG solid tinned copper wires, bonded, using Cadweld fittings at each fence post. All Cadwelding locations shall be cold galvanized as above

- Antenna mounts shall be grounded to the tower. A copper ground rod shall be mounted to the topmost part of the tower to be the highest point on the structure.

- The shelter's interior ground and transmission line copper inside entrance port (buss bar) shall be bonded to the outdoor ground system.

- A ground test well shall be provided at a minimum of two points along the ground ring. The test wells shall consist of 4"x 2' PVC pipe, with a screw type cap installed. The test well shall allow measurement of ground system resistance at opposite corners of the tower.

- Grounding system resistance shall be measured to be 3-ohms or less between any point on the ground system and earth ground.

10.7 Required Tower Submittals (All Sites)

10.7.1 The Contractor shall furnish wind-load stress and foundation calculations used in the design of the proposed tower structure. These calculations must have been developed and approved by a Professional Engineer Licensed in the State of Florida.

10.7.2 The Contractor shall furnish documentation approved by a registered professional engineer, licensed in the State of Florida, certifying that the proposed tower and foundation meets the requirements of TIA-222-G or latest version and is in accordance with these Specifications.

10.7.3 Prior to proposal submission, Proposers shall, at their own expense, make such additional investigations on site conditions, as necessary, for the successful and accurate completion of their Proposal Submittal. The City of Hialeah shall permit site inspection access during normal business hours.

10.7.4 Proposers shall furnish documentation as to any special condition or restriction applied to the use of materials, products or equipment contained in their Proposal. Contractor shall provide to the City a minimum of two sets of completed as-built documents on each tower and shelter installed in this project. This shall include engineering and design document from the tower and shelter manufacturer.

10.7.5 The Contractor shall furnish written certification that all installed tower components have been assembled and hot-dipped galvanized in accordance with these minimum requirements.

10.7.6 The Contractor shall provide a detailed report of electrical ground resistance measurements of the completed, as-installed, electrical grounding system, on a per-site basis with field drawings to indicate the measurement at a specific location.

10.7.7 All newly proposed tower construction shall conform to local, municipal and state requirements. This includes, but is not limited to a GPS Survey, FAA Study, Engineering Tower Design, Building Design, Land Survey, Structural Analysis, Site Layout, Construction Drawings, Environmental and Endangered Species Study, Archeological Study, Indian Burial Ground Study, US Fish and Wildlife Study, Wetlands Study, and State Historical and Museum Commission Study.

11.0 Site Work Requirements

11.1 Site Preparation and Sub-grading

11.1.1 General

Site clearing, initial earthwork, rough grading and final grading as needed for installation of towers and equipment shelters is the responsibility of the Contractor. The following describes a set of minimum requirements for the execution and completion of site-related construction activities.

11.1.2 Performance

1. Dewatering:

   a. Control grading around excavations to prevent surface water from flowing into excavation areas.

   b. Drain or pump as required thereby maintaining all excavations, trenches and pier holes free of water from any source and discharge to approved drains or channels. Commence dewatering action when water first appears and continue until work is complete to the extent that no damage will result from hydrostatic pressure, flotation, or other causes.

   c. Use pumps of adequate capacity to insure rapid drainage of area, and construct and use drainage channels and sub-drains with sumps as required.

   d. Remove unsuitable excessively wet sub-grade materials and replace with approved backfill material.

2. Compaction:

   a. Compact sub-grades, fills, embankments and backfills using spreading equipment, tamping rollers, rubber-tired rollers, vibratory compactors, or power tampers, as required to obtain reasonable uniformity. Nuclear soil testing results are required to be provided in a report to the Consultant.

   b. Perform within moisture content range as specified to obtain required results with equipment used.

   c. Achieve minimum densities specified as references to:

      1) Cohesive soils - 95% maximum density at optimum moisture, AASHTO T99

      2) Cohesionless Soils - 70% of maximum relative density

a) ASTM, STP 479 - Bunnister method

b) USBR - E12 relative density

c) ASTM D2049 - relative density

3) Cohesionless Soils

a) The City of Hialeah or designee may approve the use of AASHTO T99 for certain cohesionless soils using at least 100% of maximum density.

4) Compact control fill and backfill in not over 8-inch lifts/ layers and compact to between 90% to no more than 96% of maximum density at optimum moisture AASHTO T99.

11.2 Drilled Pier Foundations

11.2.1 General

1. Extent of Work:

a. Perform all drilling and excavation and supply all labor and materials to construct drilled pier foundations, as necessary.

11.2.2 Performance

1. Quality Assurance:

a. Field Inspection by City designee - quality control.

1) The City of Hialeah's Project Representative will be designated to be responsible for field inspection of the drilled pier foundations. He will transmit, in writing, to consultant and Contractor any materials or methods observed by him, which do not conform to this specification and, if required, will not be considered for payment. The City's Project Representative must inspect each drilled pier. Specific responsibilities of the City's Project Representative will be to:

a) Observe drilling excavation of drilled pier foundations. Ensure the placement of anti-caving physical barriers or the use of special drilling mud to prevent excessive cavitation.

b) Inspect material and equipment used in construction of drilled piers.

c) Inspect bearing elevation of drilled piers.

d) Observe placement of concrete and rebar within the drilled pier foundation to match design specification. Ensure that no excessive earth contamination occurs. Contamination of poured concrete is sufficient to cancel the pour and request engineering inspection.

e) Hialeah's representative shall photograph or film all foundation excavation and pouring activities.

2. Contractor Qualifications

a. A minimum of two years' experience in drilled pier construction, including experience with similar subsurface material, water conditions, shaft sizes, and special techniques as required.

3. Drilled Pier Details

a. Drilled shaft dimensions and top elevations shall be in accordance with foundation design calculations and drawings.

b. The drilled shaft bearing or bottom elevation shall be at the elevation indicated, unless it is determined by the City's Project Representative that the bearing elevation should be adjusted.

4. Drilled Pier Excavation

a. Excavate drilled shaft to dimensions and required elevations as indicated. Maintain sidewall stability during drilling and extend excavation to suitable material.

b. Determine suitability of supporting material for drilled piers as follows:

c. Inspection of each pier will be by the City's Project Representative and Contractor.

d. Remove from bottom of drilled piers, loose material or free water in quantities sufficient to cause settlement or affect concrete strength as determined by the City's Project Representative.

e. Install temporary casing, where required, to prevent caving of drilled pier sides or excessive seepage.

f. Dewater all drilled pier excavations prior to cleaning, inspection, and placing concrete.

g. Each drilled pier must be inspected and approved by the City's Project Representative before any concrete may be placed.

5. Excavated Material

a. Dispose of any excavated material at locations approved for that purpose.

6. Reinforcing Steel

a. Place reinforcement for drilled piers in accordance with foundation design documents.

b. Place bars as shown on foundation drawings with concrete cover of not less than 3-inches where exposed to soil.

c. A reinforcing cage shall be designed as a structural element and braced to retain its configuration throughout the placing of concrete and the extraction of the casing (if used) from the shaft.

7. Concreting

a. Dewater drilled piers and maintain the excavation free of water prior to placing concrete.

b. Place concrete immediately after final inspection.

c. Place concrete immediately after completion of excavation and after City's Project Representative has completed his inspection. Do not leave uncased excavations open overnight.

d. Free fall concrete (not over 6') may be used provided it is directed through a hopper, or equivalent; such that fall is vertical down center of shaft without hitting sides. Vibrate concrete, but only after casing, if used, has been pulled.

e. Place concrete in pier in one continuous pour operation from bottom to top.

f. The City's Project Representative will provide inspection during the removal of casing and placing of concrete. Withdraw casing, if used, only as shaft is filled with concrete. Maintain adequate head of concrete to balance outside soil and water pressure above the bottom of the casing at all times during withdrawal. Specific procedures that the Contractor will follow to accomplish this objective shall be submitted for approval.

g. Where casing is removed, provide specifically designed concrete with a minimum slump of 5-inches and with a retarder to prevent arching of concrete (during casing pulling) or setting concrete until after casing is pulled. Check concrete level prior to, during, and after pulling casing. Pull casing before slump decreases below 5-inches as determined by testing.

h. During casing extraction, upward movement of the reinforcing steel shall not be permitted. Downward movement should not exceed 2-inches per shaft length.

i. Remove all water and concrete contaminated with soil, or water before resuming concrete placement.

j. Center reinforcing cages in the drilled pier excavation and suspend them in an approved manner prior to placement of concrete to the cutoff elevation.

k. Leave forms on pier for a period of three days.

l. Set anchor bolts to the manufacturer's required tolerances, using substantial templates or other approved method.

11.3 Concrete, Forms and Reinforcement

11.3.1 General

1. This Specification includes concrete, forms, and steel reinforcement as used for:

    a. Drilled pier foundations with square caps for steel structures.

    b. Concrete pads for transformers and breakers.

    c. Equipment shelter and tower foundations.

    d. Cable trench.

2. Quality Assurance

    a. Applicable Standards

        1) American Concrete Institute (ACI)

            a) ACI 304 - Recommend Practice for Measuring, Mixing, and Placing Concrete.

            b) ACI 305 - Committee Report on Hot-Weather Concreting.

            c) ACI 306 - Committee Report on Cold-Weather Concreting.

            d) ACI 315 - Manual of Standard Practice for Detailing Reinforced Concrete Structures.

            e) ACI 318 - Building Code Requirements for Reinforced Concrete.

        2) American National Standards Institute (ANSI)

            a) B 1 8.2.1 - Square and Hex Bolts and Screws, Including Askew Head Bolts, Hex Screws, and Lag Screws.

b) B 1 8.2.2 - Square and Hex nuts.

3) American Society for Testing and Materials (ASTM).

a) A36 - Structural Steel.

b) A82 - Cold-Drawn Wire.

c) AI 85 - Welded Steel Wire Fabric for Concrete Reinforcement.

d) A307 - Low-Carbon Steel Externally and Internally Threaded Standard Fasteners.

e) A615 - Deformed Billet Steel Bars for Concrete Reinforcement.

f) C31 - Making and Curing Concrete Compression and Flexure Test Specimens in the Field.

g) C33 - Concrete Aggregates.

h) C39 - Compressive Strength of Cylindrical Concrete Specimens.

i) C94 - Ready-Mixed Concrete.

j) C 143 - Slump of Portland Cement Concrete.

k) C 150 - Portland Cement.

m) C309 - Liquid Membrane-Forming Compounds for Curing Concrete.

n) C494 - Chemical Admixtures for Concrete.

4) Midwest Concrete Industry Board (MCIB).

11.3.2 Equipment and Materials

1. Concrete Materials

a. Cement

1) Conform to ASTM C 150. Portland cement Type 1.

b. Water

1) Water shall be clean and free from injuries amounts of oil, acids, alkaline, or other deleterious substances. Any potable drinking water will be acceptable.

c. Fine Aggregates

1) Clean natural sand. Manufactured sand may be used upon written approval of the City of Hialeah's designee. Conform to ASTM C33.

d. Coarse Aggregates

1) Clean crushed stone or processed gravel, not containing organic materials. Conform to ASTM C33.

e. Air Entertainment

1) 4-6% air shall be used in all concrete.

f. Water Reducing Admixture

1) Conform to ASTM C494, Type A.

2. Concrete Mix

a. Ready-mixed Concrete

1) Concrete shall meet requirements of ASTM C94, and of materials and proportions specified.

2) Ready-mixed concrete plant shall be subject to approval of The City of Hialeah's Project Representative.

3. Forms

a. Form materials; use one of the following:

1) Exterior grade plywood 5/8 inch thick.

2) Approved wood fiberboard.

3) Dressed lumber, free of loose knots.

4) Approved preformed economy forms.

5) Forming materials may be treated with approved form oil for ease of form removal.

b. Form Ties

1) Approved break-back type.

4. Steel Reinforcement

a. Reinforcement Bars

1) Conform to ASTM A615, Grade 60 for all bars No.4 or larger.

b. Tie and-All No.3 Bars

1) Conform to ASTM A615, Grade 40.

c. Welded Wire Fabric

1) Conform to ASTM A185, using bright basic wire conforming to ASTM A82. Wire gauge No. 11 or smaller shall be galvanized.

5. Grout

Use unshrinking, easy flow type grout as approved by Hialeah's Project Representative.

6. Anchor Bolts

a. Provide all anchor bolts required for complete installation.

b. Anchor bolts and accessories shall conform to ASTM A307 using A36 steel.

c. Use hexagonal bolts and nuts conforming to ANSI B 1 8.2.1 and B 1 8.2.2.

d. All exposed area of anchor bolts and nuts, plus a minimum of three inches of embedded area, shall be hot-dipped galvanized.

e. Install as indicated on foundation drawings.

11.3.3 Performance

1. Field Testing

a. Field testing of concrete and making of concrete test cylinders will be performed by an independent testing laboratory approved by the City of Hialeah Permit Department.

b. Laboratory Testing

1) Laboratory for testing shall be selected and paid by the City of Hialeah.

2) Laboratory will furnish cylinder molds with cap seals or adequate means of identification.

3) Cylinders shall be tested conforming to ASTM C39. Average strength of two test cylinders (at 28 days) shall be used as result of the test. Break one test cylinder after 7-days curing, one after 14-days, and two after 28-days.

4) Results shall be provided to the Project Representative in a formal report. A copy shall be provided to the Consultant and Contractor.

2. Low Strength Concrete

a. Defined as concrete whose 7-day and 14-day test (average of 2 cylinders) is less than 70% and 85%, respectively, of the specified minimum 28-day compressive strength. If concrete does not meet the 4000 lb. test in twenty-eight days, the Contractor shall pay for the cost of the core test.

b. Disposition of Concrete

1) Concrete shall remain accessible with no other work performed that relates to or depends upon the questionable concrete until a formal decision as to the disposition of the concrete is given by Hialeah's Project Representative.

2) Low strength concrete shall be removed and replaced if so requested by The City of Hialeah's designee.

3. Placing of Concrete

a. Preparation

1) Clean bonding surfaces free from laitance and foreign materials.

2) Place concrete on property prepared and unfrozen sub grade and only in dewatered excavations.

3) Do not deposit partially hardened concrete or concrete contaminated by foreign materials.

b. Placing Concrete

1) Conform to ACI 304.

2) Place within 60 minutes after mixing, except the City's designee may extend the period to 90 minutes (maximum) dependent upon weather conditions.

3) Place in horizontal layers not exceeding 18-inches.

4) Vibrate concrete to produce solid mass without honeycomb or surface air bubbles.

c. Curing Concrete

1) Cure with liquid membrane-forming compound conforming to ASTM C309, Type I. Apply according to manufacturer's recommendations.

2) Apply curing compound to all exposed surfaces immediately after removing form or after finishing concrete.

3) Keep formwork wet until stripped.

d. Cold Weather Placing

1) Conform to the practice recommended in ACI 306 when the temperature is below 40-degrees F or is likely to fall below 40-degrees F during a twenty-four hour period after placing.

2) Protect pier caps and other concrete from freezing by the use of insulating blankets.

e. Hot Weather Placing

1) Conform to practices recommended in ACI 305 when temperature is 90-degrees F or above or is likely to rise above 90-degrees F within a twenty-four hour period after placing.

4. Construction Joints

a. Locate where indicated. Conform to AC 318.

b. Clean and break laitance or other foreign material from bonding surface. Bed with 1-inch of grout for bonding in horizontal joints.

5. Surface Finishes

a. Float Finish

1) Compact, accurately screed, and wood float all slabs to a true uniform surface.

2) Test surface with straightedge and eliminate high and low spots of more than 1/8 inch in ten feet.

3) Use this finish in addition to the finishes specified below for all surfaces as indicated.

4) Use a final finish for footing slabs not exposed.

b. Hand-Troweled Finish

1) Finish surface as in Float Finish and in addition, trowel and steel trowel to obtain a smooth dense finish after concrete has hardened to ring under the trowel.

2) Use this finish on all floors, slabs, and equipment bases not specifically designated for a different finish.

c. Broom Finish

1) Finish surface as in Float Finish and, in addition, draw a stiff bristled broom across the previously floated surface.

2) Corrugations shall be uniform in appearance, not more than 1/16-inch in depth and shall be perpendicular to direction of traffic.

3) Use this finish on all outdoor slabs subject to vehicular or pedestrian traffic and areas to receive grout.

d. Burlap Finish

1) Apply burlap surface treatment to exposed edges of slabs, curbs and foundations.

2) Wet and fill all voids using mortar with the same sand-cement ratio as original concrete. Use approximately 20% white cement to match concrete color.

3) Strike off all excess mortar flush with the surface using a burlap or canvas cloth with a circular motion.

4) Remove all rough spots and rub with cloth to leave a surface of uniform texture and appearance.

5) Finish shall result in a coating of mortar that will fill all small voids and air holes leaving a smooth surface.

6) Cure as specified under Curing Concrete.

6. Defective Surface Treatments

a. After removal of forms, remove all fins, projections and form ties.

b. Grout and cure all voids, damaged areas, and tie holes.

7. Forms

a. Treat forms with an approved oil or lacquer prior to placing reinforcement.

b. Wet forms with clean, clear water prior to placing concrete.

c. Adequately brace and stiffen forms to prevent deflection and settlement.

8. Steel Reinforcement

a. Place accurately, tie at intersection, and support on chairs. Conform to ACI 318.

b. Tie securely with 16 gauge or larger annealed iron wire.

c. Splice steel not less than 30 bar-diameters for A615, Grade 40, and 42 bar-diameters for A615, Grade 60, unless otherwise indicated.

d. Splice plain bars not less than twice that for deformed bars.

e. Lap welded wire fabric not less than the length of one mesh.

f. No.3 bars to be Grade 40, with all others to be Grade 60.

g. Provide 3/4-inch chamfer for all exposed edges of concrete, vertical and horizontal.

11.4 Fences and Gates (Chain-Link Security Type)

11.4.1 General

1. Description

a. This section covers chain-link fabric fence and gates.

2. Quality Assurance

a. Applicable Standards

1) Federal Specifications (FS)

a) FF-BO-575 - Bolts, hexagon and square.

b) RR-F-191 - Fencing, wire and post, metal and gates, chain-link fence fabric, chain-link and accessories.

c) RR-F-221 - Fencing, wire, barbed wire, woven-wire and netting, fence post and accessories.

11.4.2 Requirements

a. Manufacturer's standard materials where such materials conform to these Specifications or have been approved by Engineer.

b. Conform to FS RR-F-191 except as indicated or specified otherwise.

c. Fence height – 8 ft. high galvanized chain link with 4-strand barbed wire at top (91/2 feet overall height).

d. Gate widths as indicated on layout drawings.

e. Finish for framework and appurtenances (excluding fabric) – Galvanized with minimum weight for zinc per square foot as follows:

1) Pipe – 1.8 ounces.

2) Hardware and accessories – conform to FS RR-F-191.

3) Barbed wire – 0.80 ounce.

f. Finish for fabric

1) Galvanized per ASTM A392, Class-2 with 1.8-ounce, minimum weight, for zinc per square foot or

2) Aluminum coated per ASTM A491, Class-2 with 0.40-ounce, minimum weight, for aluminum per square foot.

g. All fence and gates to have 4-strand barbed wire at top.

h. All materials furnished shall comply with the above requirements.

11.4.3 Fabric

a. No.9 gauge, 2-inch diamond mesh chain-link fabric.

b. Top and bottom selvage twisted and barbed.

c. Fabric fastenings of 9-gauge galvanized wire ties.

11.4.4 Posts, Top Rail and Braces

a. Posts

1) End, angle, corner or pull posts – 3-inches O.D. at 5.79 pounds per foot.

2) Line posts – 2.5-inches O.D. at 3.65 pounds per foot.

3) Gate posts – 4.0-inches O.D. at 9.10 pounds per foot.

b. Top rail

1) 1.625-inch O.D. standard weight steel pipe.

2) 18-foot minimum length of each section.

3) Expansion type coupling for each joint.

c. Post bracing

1) Diagonal truss rods 3/8 inch in diameter equipped with truss tightener.

2) Horizontal braces – 1.660-inch O.D. at 2.27 pounds per foot.

d. Post tops

1) Designed as a weather tight closure cap for tubular posts.

2) Malleable iron or pressed steel.

e. Barbed wire supporting arms

1) Single arm at 45-degrees with vertical, sloping to outside of fence.

2) Constructed for attaching four rows of barbed wire to each arm and designed as a weather tight closure cap for tubular posts.

3) Designed for 200-pound minimum pull down load.

4) Attached to steel posts or integral with post top.

5) Provided with openings to receive top rail.

6) Malleable iron or pressed steel.

f. Stretcher bars

1) One piece, full height of fabric.

2) 3/6 inch x 3/4 inch, galvanized.

3) Bands of galvanized steel or malleable iron.

g. Bolts

1) Zinc coated.

2) Conform to FS FF-B-575.

11.4.5 Barbed Wire

a. Two-strand, l21/2 gauge wire with 4-point barbs 5 inches O.C.

b. Conform to FS RR-F-221, Type 1, Style 2.

c. Four rows required on all fence and gates.

11.4.6 Gates

a. Framing

1) Frames of tubular members, 2-inch O.D. at 2.72 pounds per foot

2) Intermediate horizontal and vertical members for proper gate operation and for attachment of fabric, hardware and accessories

3) Frames assembled by welding or watertight galvanized steel rigid fittings

4) Diagonal cross bracing of 3/8 inch diameter adjustable truss rods to provide frame rigidity

5) Gate end members extended one foot above top members to receive four rows of barbed wire

b. Hardware

1) Hinges of pressed or forged steel, or malleable iron, non-lift-off type, 1 1.2 pair per leaf.

2) Latches and gate stops – double leaf.

a) Plunger-bar type latch, full gate height, designed to engage gate stop of flush-plate type with anchors.

b) Locking device and padlock eyes an integral part of latch.

c) Keeper to automatically engage gate leaf and secure free end of gate in full 90-degrees open position.

3) Latches – single leaf.

a) Forked type to permit operation from either side of gate.

b) Padlock eye as integral part of latch.

11.4.7 Performance

1. Installation

a. Fence

1) Follow general contour of ground and properly align.

2) Posts

a) Set in concrete retaining wall. Trowel finish tops of footings and dome to direct water away from posts.

b) Install plumb and in straight alignment.

c) Space ten feet center-to-center maximum.

d) Temporarily brace until concrete in bases has set.

3) Post Bracing

a) Install at each end and gatepost, and on each side of comer posts.

b) Install after concrete in post bases has set.

c) Install so posts are plumb when diagonal rod is under tension.

4) Top Rails

a) Run continuously through post caps or barbed wire supporting arms.

b) Install expansion coupling at each joint.

5) Tension Wire

a) Weave through the fabric and tie to each post with minimum 6 gauge galvanized wire.

6) Fabric

a) Stretch taut with equal tension on each side of line posts.

b) Fasten to top rail and steel posts with wire ties.

c) Space wire ties at 12-inches O.C. maximum on posts and at 24-inches O.C. maximum on top rail.

7) Stretcher Bars

a) Thread through or clamp to fabric 4-inches O.C.

b) Secure to posts with metal bands spaced 15-inches O.C. maximum.

c) Install at each gate, pull and end post, and each side of comer post.

8) Barbed Wire

a) Attach four rows to each barbed wire supporting arm. Pull wire taut and fasten securely to each arm.

b) Install four rows above fabric and on extended gate end members of gates.

b. Gates

1) Install plumb, level, and free swinging through full opening without interference.

2) Install all hardware, including keepers, ground set items and flush plate in concrete to engage gate stop.

3) Furnish and install gate alarms.

4) Adjust and lubricate as necessary for smooth operation.

c. Repairing Damaged Coatings

1) Repair any damaged coating in the shop or field by recoating with compatible and similar coating.

2) Apply per manufacturer's recommendations.

d. Danger Signs

1) Furnish and install signs as approved by the City of Hialeah's designee.

Note: All fencing at any site must be exothermically bonded to the site's electrical grounding system. All major posts, gates and fabric must be integrated into this bonding scheme. All locations

of exothermic bonding must be properly treated by recoating with a compatible and similar coating to prevent corrosion.

11.5 Crushed Rock Surface

11.5.1 General

1. Description

   a. This section includes crushed rock surface and method of depositing for the placement of permanent crushed rock surfacing in equipment shelter areas.

   b. Related work specified elsewhere.

      1) Site preparation and earthwork – Section 10.1.

      2) Herbicide application – Section 10.6.

2. Quality Assurance

   a. Applicable Standards

      1) American Society for Testing and Materials

         a) C117– Test for Materials Finer than No. 200 Sieve in Mineral Aggregate by Washing.

         b) C131– Test for Abrasion of Coarse Aggregates by Use of Los Angeles Machine.

         c) C136 – Test for Sieve or Screen Analysis of Fine and Coarse Aggregates.

         d) D423 – Test for Liquid Limit of Soils.

         e) D4242–Test for Plastic Limit and Plasticity Index of Soils.

         f) D75 – Sampling Stone, Slag, Gravel, Sand and Stone Block for Use as Highway Materials.

      2) American Association of State Highway and Transportation Officials (AASHTO).

         a) T99–Test for the Moisture Density Relations of Soils Using a 5.5-Pound Rammer and a 12-Inch Drop.

         b) Samples and Testing.

c) Test to determine conformance with all requirements for material quality and properties specified herein will be performed by an independent laboratory approved by the City of Hialeah and compensated by the Contractor.

d) Obtain representative samples of material in accordance with ASTM D75 for testing. Furnish Hialeah's designee sufficient materials for testing from each sample at the time obtained.

e) Furnish specific schedule for sampling to provide Hialeah's designee the opportunity to observe sampling.

f) Quality control testing will be performed during construction by a testing laboratory retained by the City of Hialeah.

3) Submittals

a) Includes, but not limited to, the following:

1) Test result reports from testing laboratory indicating conformance with the specifications.

2) Certification of conformance with the specifications.

11.5.2 Equipment

1. General

a. Crushed rock surface shall consist of 3/4" aggregate placed on top of a 6-mil polyvinyl.

2. Aggregate

a. Crushed limestone or crushed natural gravel, free from lumps or balls of clay or other objectionable matter, and reasonably free from thin and elongated pieces of dirt. Aggregates shall consist of angular fragments, durable and sound, and shall be reasonably uniform in density and quality.

11.5.3 Performance

1. General Requirements

a. Stockpiles

1) Only with approval of the City of Hialeah's designee in specified locations.

2) Clear and level storage sites prior to stockpiling.

3) Place in a manner and at locations designated by the City of Hialeah, providing separate stockpiles for materials from separate sources.

b. Preparation of sub-grade

1) Clean off all foreign substances.

2) Correct any ruts, depressions, or soft yielding spots and areas with inadequate compaction.

3) Treat all sub-grade areas with soil sterilant.

4) The City's Project Representative will inspect, prior to placing crushed rock surface, for adequate compaction and surface tolerances.

c. Grade control

1) Establish and maintain by means of grade stakes, properly spaced so string lines may be stretched between stakes.

2. Placing, Shaping and Compaction of Materials

a. Placing

1) Deposit and spread material in a uniform lift/ layer and compact to the thickness indicated and as specified. Spread material uniformly on the prepared sub-grade from moving vehicles or spreader boxes.

2) Level material to the required contour and grades.

3) Remove those portions of the layer, which became segregated or mixed with sub-grade material in spreading and replace with new material as required by the City of Hialeah's designee.

4) Hauling which may damage the sub-grade or surfacing will be restricted by the City of Hialeah's designee.

5) Remove and repair sub-grade areas damaged during application of the crushed rock surface.

b. Shaping and Compacting Materials

1) Compact layers no less than 3-inches or more than 6-inches thick.

2) Roll to specified compaction requirements throughout full depth of layer with power rollers, rubber-tired rollers or combination.

3) Shape and smooth by blading and rolling with power roller, rubber-tired roller, or both.

4) Hand tamp in places not accessible to rolling equipment.

5) Degree of compaction shall be as follows:

a) Base compaction on weight per cubic foot of material passing 3/4 inch sieve and compact to at least 100% of maximum density at optimum moisture.

b) Determine and control compaction in accordance with AASHTO T99.

6) Smoothness test shall be as follows:

a) Surface shall show no deviation in excess of 3/8 inch in any 10 feet when tested with a 10 foot straightened applied parallel with and at right angles to the center lines of the paved area.

b) Correct any deviation in excess of this amount of loosening, adding or removing material, reshaping, watering, and compacting as requested by the City of Hialeah's designee.

11.6 Herbicide Applications

11.6.1 General

1. Description

a. This Section includes a type of herbicide and method of placing on all areas to receive crushed rock surfacing prior to placing crushed rock.

Note: Herbicides may be only applied by an individual/firm certified in the manufacturer's recommended proper and safe application methods.

11.6.2 Equipment and Materials

1. Sprayers and applicators shall be suitable for intended use.

2. Mix herbicide per manufacture's recommendations.

3. Herbicide shall be Krover (1) as manufactured by Dupont, Inc., or an approved equal.

4. Do not apply herbicide if it is too windy or where other adverse weather conditions exist.

5. Apply at a rate of 10 pounds of product per acre, or in accordance with manufacturer's recommendations.

11.6.3 Performance

1. Apply only after final sub-grade has been established.

2. Apply before installation of vegetation barrier cloth and placement of crushed rock.

3. Follow manufacturer's recommendations on timing of application with respect to weather and barrier/crushed rock placement.

12.0 Installation Guidelines

12.1 Engineering Drawings

12.1.1 Contractor shall furnish detailed drawings prior to installation of each major portion of the system as follows:

A. Transmitter Site(s)

B. Receiver Site(s)

C. Site Antenna, Tower, and Grounding System(s)

D. Receiver Voter Equipment

E. System Controller Equipment

F. Dispatcher Console Equipment

G. Microwave Equipment Terminal(s)

12.1.2 Drawings shall, as a minimum, illustrate:

A. Relative rack/rack locations

B. Equipment power wiring (primary and emergency)

C. Equipment interconnection wiring (signal and control)

D. RF component interconnection details i.e. transmitter, combiner, antenna, etc.

E. Appropriate signal/voltage levels to facilitate alignment of level-sensitive components.

12.1.3 Civil drawings showing location details of equipment to be placed in existing or new facilities shall be provided by Contractor.

12.1.4 Contractor shall provide a comprehensive test record of alignment levels, settings and software versions installed within both infrastructure and user equipment. The scope and detail of the comprehensive equipment test and acceptance plan shall be completed prior to Contract Execution with the Successful Proposer. Prior to commencement of acceptance testing procedures, the Contractor shall ensure that all installed equipment has been furnished with the latest software releases available for those equipment items/groupings.

12.1.5 Contractor shall supply true copies of Final Project Record Documents which will include the Engineering Drawings, software releases and alignment details listed above, but amended to show system and equipment "as built" at the time of acceptance by the City of Hialeah. The total

number of document sets to be provided shall include one site-specific set for each infrastructure site and three comprehensive network sets for City use. Final Project Record Documents must be submitted to the City of Hialeah's Project Representative within forty-five days after system acceptance testing has been successfully concluded. Submissions shall also include electronic versions of all documents submitted. Final payment for Contracted services shall not be released by the City of Hialeah until this documentation submittal has been successfully completed by the Contractor and reviewed and approved by the City of Hialeah's Project Representative and Consultant.

12.2 Workmanship

All workmanship shall be of the highest standard, in accordance with Industry-accepted practices and the National Electric Code. Work areas shall be maintained in a neat, orderly fashion. Work sites shall incorporate Contractor-provided trash containers and residue of the work shall be discarded as the work is underway. All sites will be cleaned up at the end of each work day, swept clean, tools picked-up, and walkways free of obstacles and obstructions.

The installation of audio, signal, data and control cables within equipment racks, enclosures, racks and cable trays must be properly routed such that wires/cables do not cross over each within cable bundles. Cables must be properly labeled, routed and secured. To the maximum extent possible, cables carrying AC power, low-level audio, RF and digital signals must be grouped separately.

All DC wiring, particularly those areas where battery terminals and power distribution bus bars are located, must incorporate insulation barriers to prevent the accidental short-circuiting of otherwise exposed conductors.

The City of Hialeah's Project Representative and Consultant shall have the ability to temporarily stop work progress by the Contractor if workmanship falls below acceptable levels and shall have the authority to require the Contractor to remove and/or correct all observed instances of poor wiring practice, inappropriate use of installation materials and other obvious installation defects as a result of apparent poor workmanship. Approval to resume installation work activities shall be provided to the Contractor once agreement is reached in resolving observed workmanship defects.

The determination of Contractor workmanship acceptability, as well as the suitability of any proposed rework plans offered by the Contractor, shall remain with the City of Hialeah's Project Representative and the Consultant.

13.0 Phasing/Implementation

13.1 Phasing of New Network

13.1.1 Contractor must prepare and submit a comprehensive migration plan that will prevent disruption of communication on the existing analog conventional radio network and provide a smooth transition to the new Project 25 digital voice radio network:

A. Contractor must supply a sequence of events for the installation of the new network showing any effect the different stages of installation may have on existing systems. Any relocation or modification to existing equipment must be stipulated and prior approval obtained from the City of Hialeah's Project Representative.

B. Proposers shall provide a completion time period (in days) for the project, based on the City of Hialeah's execution of a Notice to Proceed. Proposers shall provide a schematic representation of the implementation process as well as a hypothetical migration plan. These required proposal submittals will be used by the City of Hialeah's designee and Consultant to evaluate the Proposer's ability and understanding of Specification requirements to perform this work in a manner that offers no disruption to ongoing public safety communications operations.

C. Contractor shall provide a time schedule for the training of system managers, dispatchers, City Radio System Maintenance Personnel in addition to managers and user personnel. Contractor will supply time schedules for the orderly transfer of departments onto the new network and the estimated time period when the transfer could be completed.

13.1.2 Contractor shall coordinate the orderly transfer of services to the new network only after having successfully concluded equipment alignment and installation procedures, successful completion of the network acceptance test and completion of manager, dispatcher, user and staff training programs.

13.1.3 Contractor must not dismantle or modify the existing analog radio systems without prior approval of the City of Hialeah's Project Representative. Some portions of the existing network may remain operational after acceptance of the new system. The City of Hialeah's Project Representative will notify the Contractor when elements of the old analog infrastructure equipment may be reallocated to meet interoperability needs or otherwise can be decommissioned.

13.1.4 Contractor shall assist the City of Hialeah and all user agencies in preparing user talk groups, initial priority levels and shall complete the necessary user equipment installation, programming and record keeping, as required. This activity must be completed prior to service cutover. All fleetmapping documentation will be surrendered to the City by the Vendor.

13.1.5 Prior to Contract execution, the Successful Proposer must commence negotiations with the City of Hialeah's Project Representative and its Consultant to develop a comprehensive test and

acceptance plan that addresses, minimally, the following major functionality and operability issues:

A. Transmitter Equipment

1. Provide RF power stage measurements at different levels of the transmitter system such as transmitter, filters, combiner, cable, antenna, etc.;

2. Test R.F. components for specified insertion loss;

3. Test for proper frequency, modulation, digital signaling and stability;

4. Test and report of delivered audio quality and signal margins throughout proposed service area, in all required configurations (portable in-vehicle, portable on-street, portable in-buildings, etc.);

B. Receiver Equipment

1. Test of compliance to specifications of equipment provided;

2. Provide log of signal gain or loss to equipment within the receiver system such as antenna, cable, preamp, splitter, or receiver antenna port;

3. Test of audio quality and level (reciprocal of that required for the transmit path) of system balance;

C. Console Audio/ System Controllers

1. Test of compliance to manufacturer's published specifications of equipment provided;

2. Test of audio quality and level;

3. Verification of network failure modes in response to forced failures of individual communications/ control lines and complete site failures complete written explanation is required;

4. Verification of compliance to TIA/EIA Project 25 ISSI Standards that allow for seamless interoperability with Project 25 radio networks fielded by other manufacturers;

D. Dispatch Centers

1. Provide written results of testing of operational features per dispatch position;

2. Test system operation during simulated failures of system components i.e. console electronics, power loss, etc.

E. Subscriber Equipment

A random field test of three different manufacturer's (non-Proposers) i.e. portable radio devices (of varying tiers) shall be required to determine P25-compatibility of Proposers new 700/800MHz network. This test shall use approximately 10 portable devices per tier per manufacturer, or a total of 120 portable non-Proposer portable radios tested. If 10% or more of each type or model of equipment tested fails to meet the manufacturer's specifications, then the Contractor shall be required to perform a test of 100% of that type or model. If more than two units fail to perform adequately, and the units are determined by the manufacturer to meet P25 compatibility, the Proposers network will be deemed non-P25 compliant. All replacements for failed units shall also be tested in the same manner as outlined above. All mobile radio installations shall require 100% operational test verifications:

1. Verify compliance with vendor specifications for transmitter, receiver and control circuitry;

2. Check for compliance with RFP requirements and originally proposed functionality;

3. Check for proper user profile programming of equipment and operation on the system;

4. Testing of supportive equipment, i.e., speaker/microphone, DTMF signaling, chargers, batteries etc.

F. Contractor shall provide all test equipment, diagnostic services, documentation, software, personnel, vehicles and other items as necessary to test the delivered and installed radio network in accordance with the Contracted Test and Acceptance Plan, inclusive of operational features, to complete a total system functional test.

G. Proposer shall disclose test procedures and equipment that will be used to verify radio system coverage as specified in Section 7.0.

H. Proposers shall submit within their Proposal Submittal a sample test and acceptance plan that is representative of the scope and complexity of the proposed radio system. This plan must address those items described in Section 13.1.5, A – G.

13.2 Implementation

13.2.1 Contractor is responsible for the provisions and cost of warehousing, insurance, storage and security of radio network infrastructure and user equipment prior to and during the construction and installation phases of the project.

13.2.2 Contractor will assign a Project Manager as a single point of contact between the City of Hialeah's Project Representative and the Contractor. Contractor's Project Manager shall be approved by the City or designee prior to assignment. The City of Hialeah or its designee reserves the right to require replacement of the Contractor's Project Manager at any time during the project. Contractor's Project Manager must be resident within the City Monday through Friday, during

normal business hours and for the term of the Contract. Project Manager may be required to remain in the area during periods of Installation and Implementation failure, ATP and System Cut over, as required by the City of Hialeah's Project Representative. The Proposal Response shall include pricing options for extending the Project Manager's term for periods of three total years and five total years.

13.2.3 Prior to installation of any portion of system, the City of Hialeah, its designee and/or Consultant must approve Contractor furnished detail drawings as specified in Section 12.0.

13.2.4 Each portion of the new network must be in compliance with those technical parameters specified in the approved Testing and Acceptance plan.

13.2.5 Contractor must supply comprehensive training on user operation of portable radios, mobile radios, control stations, and other user equipment as required by the Contract Contractor must also supply comprehensive training for system diagnostics, management systems, preventative and routine maintenance and system operation for System Managers, City Radio System Maintenance personnel, and appointed staff.

13.2.6 Contractor is responsible for any site modifications required to accommodate infrastructure equipment proposed for location in City-owned as well as in non-City owned properties.

13.2.7 Contractor shall provide technical support/engineering as required to modify existing FCC licenses or to acquire additional licenses required to facilitate operation of the proposed digital radio network. This activity shall include all FCC licensing application development, frequency coordination and engineering fees.

13.2.8 Any modification or relocation of existing equipment will require prior approval by the City of Hialeah's Project Representative. Contractor shall supply "as built" drawings and complete written documentation of modifications or relocation to existing systems to facilitate maintenance of this City-owned equipment in the future.

14.0 Warranty and Maintenance Guidelines

14.1 Warranty

14.1.1 Equipment Warranty

Proposer shall warrant all provided network equipment furnished as part of the Contract and associated radio infrastructure, subscriber and related user equipment and software for a period of one year, after the date of system acceptance. Warranty will commence at the time of final acceptance and shall provide all labor and parts for maintenance and repair, including preventive maintenance, of the network provided. All cost for the one-year warranty will be borne by the Contractor. The City of Hialeah desires Proposer to provide a cost proposal for a long term (minimum five years) maintenance agreement through the major communications equipment manufacturer for all system materials and functionality. The City of Hialeah may elect to accept or deny this additional cost maintenance agreement.

The following conditions shall additionally apply:

A. Replacement parts must be of new or current manufacture and meet or exceed the specifications of the original supplied equipment (OEM).

B. Post-warranty replacement parts service for emergency infrastructure equipment repair, not available locally, shall be shipped out on the first available flight. Any parts required for non-emergency repair that are not available locally should be shipped out for next day delivery.

C. Contractor shall have qualified technicians available by telephone with one (1) hour of reported service outage (24/7/365), and on-site, in response to a reported service outage, within two (2) hour during normal working hours (8AM to 5PM Monday through Friday and within one hour between the hours of 5PM and 8AM, weekends and holidays). Service providers responding to emergency service outages must provide continuous non-stop support until the problem is resolved.

Major communications equipment manufacturer shall have a fully qualified, staffed and equipped service facility located within 25 miles of the City of Hialeah during all contract, warranty and maintenance agreement periods.

Response default penalties:

In the event of default on the response time on reported service outages, the Contractor agrees to pay the City of Hialeah the following response penalties: Contractor shall pay $500 for each occasion that its fails to meet the response time obligation for a reported infrastructure service outage. Contractor shall pay $1,000 per twenty-four hour period in which a defective infrastructure site is not restored to operational status.

Should any specific equipment item (such as a specific portable radio, repeater station, station circuit board, power amplifier, etc.) fail three times during the warranty period, Contractor will replace that equipment item and warranty the replacement for one additional year from the time of replacement.

D. The Contractor must make available replacement parts for all Contractor-manufactured components of the digital radio infrastructure for 15 years following acceptance. Post-warranty replacement parts service for emergency infrastructure equipment repair, not available locally, shall be shipped out on the first available flight. Any parts required for non-emergency repair that are not available locally should be shipped out for next day delivery. Failure to provide parts for contractor-manufactured items shall result in a 5% cost reduction penalty for each day parts are delayed, capped to a maximum 100% cost reduction.

Proposers shall provide, as part of Infrastructure Pricing, a list of quantities and costs for recommended spares and specific diagnostic, test and repair equipment of Infrastructure and major system components, including antennas and cabling. This list should be based on the best knowledge and experience of the Proposer's engineering, manufacturing and service personnel. This price submittal shall be in compliance with the requirements indicated by Section 16, Pricing.

E. The Contractor must guarantee the radio network's operating software, inclusive of user equipment software, for a one-year period following network acceptance. The Contractor shall provide all software updates, at no additional cost, for the entire period under which the City of Hialeah has committed for Contractor-provided after-warranty maintenance services. Contractor shall fix by either update or upgrade, any and all know software "bugs" to installed software even if such warranty period has expired.

The Contractor further guarantees that it has good title to any material and software supplied and that it will defend the City of Hialeah from any third party claims concerning such material or software

14.2 Maintenance

14.2.1 During the initial warranty period, the Contractor shall be responsible for:

A. Preventive maintenance of infrastructure and end-user equipment;

B. Repair maintenance of infrastructure equipment, inclusive of antenna systems;

C. Repair maintenance of subscriber and related user equipment;

D. Installation of mobile-mounted radio equipment.

14.2.2 Contractor-provided maintenance during the warranty period will be monitored by the City of Hialeah or its designee.

The Contractor must supply monthly service logs listing the site(s) where service is performed, the equipment involved and service details. Failure of individual units, subassemblies and/or components must be reported in writing to the City. This report must, as a minimum, include unit identification (description and serial number), explanation and cause of failure and corrective action taken. Contractor is responsible for all actions of its employees or subcontractors. Any equipment failure(s) caused by any act or omission of Contractor's employee or subcontractor shall be the responsibility of the Contractor, including any costs associated with repair, even if such damage and repair is not to Contractor's equipment or is discovered after network installation and acceptance, and shall also be subject to liquidated damages in the amount of an additional 10% of the cause of replacement or repair.

The Contractor shall submit a maintenance work plan that identifies the tasks required in accordance with Section 14.2.1, a listing of Contractor supplied personnel and identification of a single 24/7/365 contact point responsible for Contractor maintenance issues.

All required service logs and repair reports must be submitted to the City or its designee.

15.0 Radio Programming and Spare Parts Requirements

15.1 Radio Programming

15.1.1 Contractor shall assist the City of Hialeah's designee and various user agencies in determining user identification and talk path assignments.

15.1.2 Contractor shall program all portable, mobile and control station radios, all network or site controllers and all other equipment supplied by the Contractor to operate on the FCC-licensed operating frequencies and the talk paths determined in Section 15.1.1, above.

15.1.3 Contractor shall prepare and furnish to the City of Hialeah's Project Representative "as programmed" records for each radio (infrastructure & subscriber) placed on the system.

15.1.4 Contractor shall provide training for System Managers sufficient to permit the City of Hialeah designee, System Managers and City Radio System Maintenance personnel to add users, create new, or delete obsolete talk paths and to access all other system software controlled features.

15.1.5 Provisions shall be incorporated into the system to allow the Contractor, from its Home Office to remotely interrogate the operating system and provide software assistance if requested by the City of Hialeah designee, or System Manager. Access, for this purpose, must be secure and under the control of the City's P25 Project Manager.

15.1.6 Contractor must provide two sets of radio and equipment programming software, appropriately equipped laptop computers, and all other support equipment and special cables necessary to program each type of user equipment supplied by the Contractor.

15.1.7 Contractor shall provide system monitoring access to the City from within the primary dispatch center.

15.1.8 Contractor shall assign specific technicians to the City of Hialeah radio system.

15.2 Spare Parts

15.2.1 Contractor must maintain an initial stock of spare parts, as determined necessary, to maintain all components of the network's infrastructure for a two-year period. These spare parts shall be located either at selected City of Hialeah radio infrastructure sites or at the Contractor's local maintenance service facility.

15.2.2 As spare parts are consumed in the course of routine or repair maintenance, the Contractor shall immediately replenish its stock of locally housed spare parts, where necessary. A report of the utilization frequency and rate of all spare materials shall be made available. If at any time the Contractor is aware of any equipment repair or recall notifications the Contractor shall notify the City by electronic and routine mail. Trends of unusual system or component failure shall be brought to the attention of the City of Hialeah by the Contractor.

15.3 Test Equipment

15.3.1 Contractor must update/upgrade or replace existing City of Hialeah test equipment to support P25 basic maintenance and diagnostics. If existing equipment cannot be updated/ upgraded for P25 support, then the Contractor shall recommend replacement equipment and provide optional pricing as part of this RFP.

- General Dynamics Service Monitor — General Dynamics
Model # R2670B
Serial # 496LCW0019
Boot ROM Version R3.06

- Recommended additional equipment

16.0 Pricing Considerations

16.1 General Pricing Information

This infrastructure and subscriber equipment-pricing portion of this Specification is developed as a guide for Proposers so that the necessary information is provided to the City of Hialeah, their designee and Consultant for it to conduct an accurate assessment of proposed cost. This information is illustrative of the detail required for each infrastructure site, inclusive of sites having only dispatch-related equipment. As this is a turnkey system, any pricing omission of a scope that is normally considered part of a multisite or simulcast trunked radio system, will be provided for by the Contractor at no additional cost to the City of Hialeah.

Subscriber equipment (mobiles, portables and accessories) is intended to be purchased as part of this Specification. Some or all user equipment purchases and quantities ordered may be delayed or not ordered depending on the City of Hialeah financing options and capabilities. The pricing of this equipment for both initial and future purchases will be considered in determining the most advantageous price. The City of Hialeah shall perform a life-cycle analysis in determining the best price-value.

In the case of manufacturers of low-tier Project 25 compliant subscriber (user) equipment devices desiring to offer such equipment for consideration, the City of Hialeah welcomes such participation. This procurement, however, is structured for the purchase of both infrastructure and user equipment from a turnkey provider. Therefore, manufacturers of Project 25 compliant subscriber equipment shall have entered into formal sales/service agreements with established infrastructure providers (i.e., Motorola; Harris; EF Johnson, etc.) for their equipment to be considered for this procurement. Furthermore, such third-party equipment shall be proposed only by those providers offering a responsive infrastructure proposal.

Proposals for subscriber equipment only shall not be accepted.

16.2 Site Modification Costs

16.2.1 City of Hialeah Owned Sites

For equipment to be installed at Hialeah owned sites which have requirements for site preparatory work involving architectural, mechanical, electrical, civil or structural construction modifications, a description and cost of the modifications required must be provided by the Proposer for each individual named site.

16.3 Maintenance Costs

It is the intention of the City of Hialeah to use City resources (City Radio Maintenance Personnel) and rely minimally on outside contract labor, for maintaining its infrastructure equipment and subscriber equipment.

An annual maintenance cost for each infrastructure-related site, to become effective after expiration of the initial warranty period, must be provided. Total site maintenance costs are to be subdivided by the individual major components groupings that comprise each site. All site (backbone infrastructure) maintenance costs should be totaled. Additionally, Proposers are required to provide the percentage of maintenance cost escalation through the twentieth year of network ownership and to indicate their methodology for determining the percentage cost escalation.

16.4 Pricing Summaries

Pricing Summaries for Infrastructure and Subscriber equipment shall be provided as part of the Proposal Submittal.

16.5 Future Purchase Considerations

It is the intent of the City of Hialeah to operate this new radio communications network for, minimally, the next twenty years. As some portions of the equipment purchased may only be available from one vendor, it is important that the City of Hialeah receive reasonable safeguards with regard to future pricing.

16.5.1 Immediate Future Discounts

The City of Hialeah requires within the Proposal a certainty of continued purchase, at the beneficial initial contract costs, of all equipment, components, parts, materials, software, and service agreements for a minimum of 5 years.

For all purchases within five (5) years after the network acceptance date, the discount percentage received by the City of Hialeah will be identical to the discount percentages derived from list-price unit equipment costs and proposed unit costs. The Proposer shall define the discount structure for radio infrastructure, subscriber equipment, Contractor-furnished technical services as well as markup percentages used for outside subcontractor services. The list unit price for equipment will be determined by the manufacturer's published equipment list price, as delivered to their authorized sales agents, at the time of actual purchase.

16.5.2 Purchase Price Discount Years 6 - 10

For years six (6) through ten (10) after the network acceptance date, the City of Hialeah's discount from the manufacturer's published equipment list price, as delivered to their authorized sales agents, shall be as follows:

Fixed Site Equipment	_____%
Microwave Related Equipment	_____%
Console Equipment	_____%

Control Station Equipment	_____%
Subscriber Equipment	_____%
Accessories	_____%
Spare Parts	_____%
Maintenance Agreement	_____%

16.5.3 Price Discount Years 11 - 15

For years eleven (11) through fifteen (15) after the network's acceptance date, the City of Hialeah's discount from the manufacturer's published equipment list price as delivered to their authorized sales agents, shall be as follows:

Fixed Site Equipment	_____%
Microwave Related Equipment	_____%
Console Equipment	_____%
Control Station Equipment	_____%
Subscriber Equipment	_____%
Accessories	_____%
Spare Parts	_____%
Maintenance Agreement	_____%

16.5.4 Price Discount Years 16 - 20

For years sixteen (16) through twenty (20) after the network's acceptance date, the City of Hialeah's discount from the manufacturer's published equipment list price as delivered to their authorized sales agents, shall be as follows:

Fixed Site Equipment	_____%
Microwave Related Equipment	_____%
Console Equipment	_____%

Control Station Equipment	_____%
Subscriber Equipment	_____%
Accessories	_____%
Spare Parts	_____%
Maintenance Agreement	_____%

16.6 Infrastructure Pricing Analysis Worksheets

The following pricing worksheets are to be used as an example to developing the Infrastructure Price Submittal. These worksheets are indicative of the detail required and may be amended or expanded as necessary. Proposers shall develop and submit individual pricing sheets for each infrastructure site, inclusive of dispatch site locations, for their Price Proposal to be considered responsive. Any omission or error in developing the pricing proposal, as per Section 1.16 of this Specification, shall be the sole responsibility of the Proposer (Contractor).

Simulcast System
Control Point #1: Hialeah Fire Department

Equipment Description	Number Req'd	List Unit Cost	RFP Unit Cost	Extended Cost	Maintenance
Transmitters	_____	$_____	$_____	$_____	$_____
Transmitter Antenna Systems	_____	$_____	$_____	$_____	$_____
Combiner Package(s)	_____	$_____	$_____	$_____	$_____
Receiver Antenna	_____	$_____	$_____	$_____	$_____
Tower-Top Preamp	_____	$_____	$_____	$_____	$_____
Multicoupler	_____	$_____	$_____	$_____	$_____
Receivers	_____	$_____	$_____	$_____	$_____
800 MHz Interop Links	_____	$_____	$_____	$_____	$_____
Protected Microwave System	_____	$_____	$_____	$_____	$_____
Microwave Antenna System	_____	$_____	$_____	$_____	$_____
PCM Mux Equipment	_____	$_____	$_____	$_____	$_____
Standby Generator System	_____	$_____	$_____	$_____	$_____
Battery/Charger System	_____	$_____	$_____	$_____	$_____
M/W Installation	_____	$_____	$_____	$_____	$_____
Site Civil Modifications	_____	$_____	$_____	$_____	$_____
Equipment Shelter	_____	$_____	$_____	$_____	$_____
Tower	_____	$_____	$_____	$_____	$_____
Shelter Installation	_____	$_____	$_____	$_____	$_____
Project Management	_____	$_____	$_____	$_____	$_____
System Engineering	_____	$_____	$_____	$_____	$_____

Subtotal Equipment	$_____
Subtotal Labor	$_____
Total Equipment/Labor	$_____
Total Annual Maintenance Cost.	$_____

Simulcast System
Backup Control Point #2: Hialeah Police Department

Equipment Description	Number Req'd	List Unit Cost	RFP Unit Cost	Extended Cost	Maintenance
Transmitters	_____	$_____	$_____	$_____	$_____
Transmitter Antenna Systems	_____	$_____	$_____	$_____	$_____
Combiner Package(s)	_____	$_____	$_____	$_____	$_____
Receiver Antenna	_____	$_____	$_____	$_____	$_____
Tower-Top Preamp	_____	$_____	$_____	$_____	$_____
Multicoupler	_____	$_____	$_____	$_____	$_____
Receivers	_____	$_____	$_____	$_____	$_____
800 MHz Interop Links	_____	$_____	$_____	$_____	$_____
Protected Microwave System	_____	$_____	$_____	$_____	$_____
Microwave Antenna System	_____	$_____	$_____	$_____	$_____
PCM Mux Equipment	_____	$_____	$_____	$_____	$_____
Standby Generator System	_____	$_____	$_____	$_____	$_____
Battery/Charger System	_____	$_____	$_____	$_____	$_____
M/W Installation	_____	$_____	$_____	$_____	$_____
Site Civil Modifications	_____	$_____	$_____	$_____	$_____
Equipment Shelter	_____	$_____	$_____	$_____	$_____
Tower	_____	$_____	$_____	$_____	$_____
Shelter Installation	_____	$_____	$_____	$_____	$_____
Project Management	_____	$_____	$_____	$_____	$_____
System Engineering	_____	$_____	$_____	$_____	$_____

Subtotal Equipment	$_____
Subtotal Labor	$_____
Total Equipment/Labor	$_____
Total Annual Maintenance Cost.	$_____

Simulcast System
Transmit/Receiver Site #3: Bucky Dent Site

Equipment Description	Number Req'd	List Unit Cost	RFP Unit Cost	Extended Cost	Maintenance
Transmitters	_____	$_____	$_____	$_____	$_____
Transmitter Antenna Systems	_____	$_____	$_____	$_____	$_____
Combiner Package(s)	_____	$_____	$_____	$_____	$_____
Receiver Antenna	_____	$_____	$_____	$_____	$_____
Tower-Top Preamp	_____	$_____	$_____	$_____	$_____
Multicoupler	_____	$_____	$_____	$_____	$_____
Receivers	_____	$_____	$_____	$_____	$_____
800 MHz Interop Links	_____	$_____	$_____	$_____	$_____
Protected Microwave System	_____	$_____	$_____	$_____	$_____
Microwave Antenna System	_____	$_____	$_____	$_____	$_____
PCM Mux Equipment	_____	$_____	$_____	$_____	$_____
Standby Generator System	_____	$_____	$_____	$_____	$_____
Battery/Charger System	_____	$_____	$_____	$_____	$_____
M/W Installation	_____	$_____	$_____	$_____	$_____
Site Civil Modifications	_____	$_____	$_____	$_____	$_____
Equipment Shelter	_____	$_____	$_____	$_____	$_____
Tower	_____	$_____	$_____	$_____	$_____
Shelter Installation	_____	$_____	$_____	$_____	$_____
Project Management	_____	$_____	$_____	$_____	$_____
System Engineering	_____	$_____	$_____	$_____	$_____
Subtotal Equipment				$_____	
Subtotal Labor				$_____	
Total Equipment/Labor				$_____	
Total Annual Maintenance Cost.				$_____	

Simulcast System
Transmit/Receive Site #4: New Annex Site

Equipment Description	Number Req'd	List Unit Cost	RFP Unit Cost	Extended Cost	Maintenance
Transmitters	_____	$_____	$_____	$_____	$_____
Transmitter Antenna Systems	_____	$_____	$_____	$_____	$_____
Combiner Package(s)	_____	$_____	$_____	$_____	$_____
Receiver Antenna	_____	$_____	$_____	$_____	$_____
Tower-Top Preamp	_____	$_____	$_____	$_____	$_____
Multicoupler	_____	$_____	$_____	$_____	$_____
Receivers	_____	$_____	$_____	$_____	$_____
800 MHz Interop Links	_____	$_____	$_____	$_____	$_____
Protected Microwave System	_____	$_____	$_____	$_____	$_____
Microwave Antenna System	_____	$_____	$_____	$_____	$_____
PCM Mux Equipment	_____	$_____	$_____	$_____	$_____
Standby Generator System	_____	$_____	$_____	$_____	$_____
Battery/Charger System	_____	$_____	$_____	$_____	$_____
M/W Installation	_____	$_____	$_____	$_____	$_____
Site Civil Modifications	_____	$_____	$_____	$_____	$_____
Equipment Shelter	_____	$_____	$_____	$_____	$_____
Tower	_____	$_____	$_____	$_____	$_____
Shelter Installation	_____	$_____	$_____	$_____	$_____
Project Management	_____	$_____	$_____	$_____	$_____
System Engineering	_____	$_____	$_____	$_____	$_____

Subtotal Equipment	$_____
Subtotal Labor	$_____
Total Equipment/Labor	$_____
Total Annual Maintenance Cost.	$_____

16.7 Subscriber Equipment Pricing

The City of Hialeah envisions several tiers of portable and mobile radio units for use by the various public safety and non-public safety agencies. Those non-public safety users having minimal interoperability needs, such as the Public Works Department, may benefit from lower-tiered, less costly radios having smaller talk group capacities and a limited list of feature options. Public Safety agencies, however, may require highest-tier devices capable of voice encryption, telephone interconnect calling, private call, GPS location, status messaging and other specialized features.

Proposers shall develop cost proposals for low, mid and high-tier radio products using the following general format:

High-Tier Portable

1. At least 250 modes/talk groups/channels
2. 700/800MHz operation
3. Multi-line 8 character minimum, alpha-numeric LCD text display
4. Radio/network status icons
5. Private/individual call
6. 256-bit AES voice encryption (optional)
7. AMBE+2 vocoder
8. Emergency button
9. Programmable option buttons
10. Talk group scan
11. System scan
12. Intrinsically safe
13. Integrated voice/data capability
14. Wide range of optional accessories

Mid-Tier Portable

1. At least 120 modes/ talk groups/ channels
2. 700/800MHz operation
3. Multi-line 8 character minimum, alpha-numeric LCD text display
4. Radio/network status icons
5. Private/individual call
6. 256-bit AES voice encryption (optional)
7. AMBE+2 vocoder
8. Emergency button
9. Programmable option buttons
10. Talk group scan
11. System scan
12. Intrinsically Safe
13. Integrated voice/data capability
14. Wide range of optional accessories

Low-Tier Portable

1. At least 48 modes/talk groups/channels
2. 800MHz operation
3. Single line, 8 character minimum, alpha-numeric LCD text display
4. Radio/network status icons
5. AMBE+2 vocoder
6. Emergency Button
7. Programmable option buttons
8. Limited list of optional accessories

High-Tier Mobile Radio

1. At least 250 modes/talk groups/channels
2. 700/800MHz operation
3. Remote control head/rear mount/dash mount configurations
4. Multi-line alpha-numeric LCD text display
5. Radio/network status icons
6. Private/individual call
7. 256-bit AES voice encryption (optional)
8. AMBE+2 vocoder
9. Emergency button
10. Programmable option buttons
11. Talk group scan
12. System scan
13. Integrated voice/data capability
14. Wide range of optional accessories

Mid-Tier Mobile Radio

1. At least 250 modes/talk groups/channels
2. 700/800MHz
3. Remote control head/rear mount configuration
4. Multi-line alpha-numeric LCD text display
5. Radio/network status icons
6. Private/individual call
7. 256-bit AES voice encryption (optional)
8. AMBE+2 vocoder
9. Emergency button
10. Programmable option buttons
11. Talk group scan
12. System scan
13. Integrated voice/data capability
14. Wide range of optional accessories

Low-Tier Mobile Radio

1. 800MHz operation
2. Front mount/dash mount package
3. At least 48 modes/talk groups/channels
4. Two line alphanumeric display
5. Network/radio icons
6. AMBE+2 vocoder
7. Programmable option buttons
8. Emergency button
9. Limited range of optional accessories

The following illustrates the approximate quantities, types and tiers of subscriber equipment that could potentially be used on the P25 Digital Voice Radio Network:

Police Departments

- High Tier Portables
- Mid-Tier Portables
- High Tier Mobiles
- Mid-Tier Mobiles
- Control Stations

Fire Departments

- High Tier Portables
- Mid-Tier Portables
- High Tier Mobiles
- Mid-Tier Mobiles
- Control Stations

Local Government/Public Works

- Mid-Tier Portables
- Low Tier Portables
- Mid-Tier Mobiles
- Low Tier Mobiles
- Control Stations

Additionally, Proposers shall prepare a detailed optional equipment catalog that describes the full range of options available for all Tiers and indicated portable and mobile radio configurations. The submitted catalog shall include list prices and the proposed discount percentage-reduced initial purchase price.

APPENDIX A

City of Hialeah Subscriber Radio Requirements

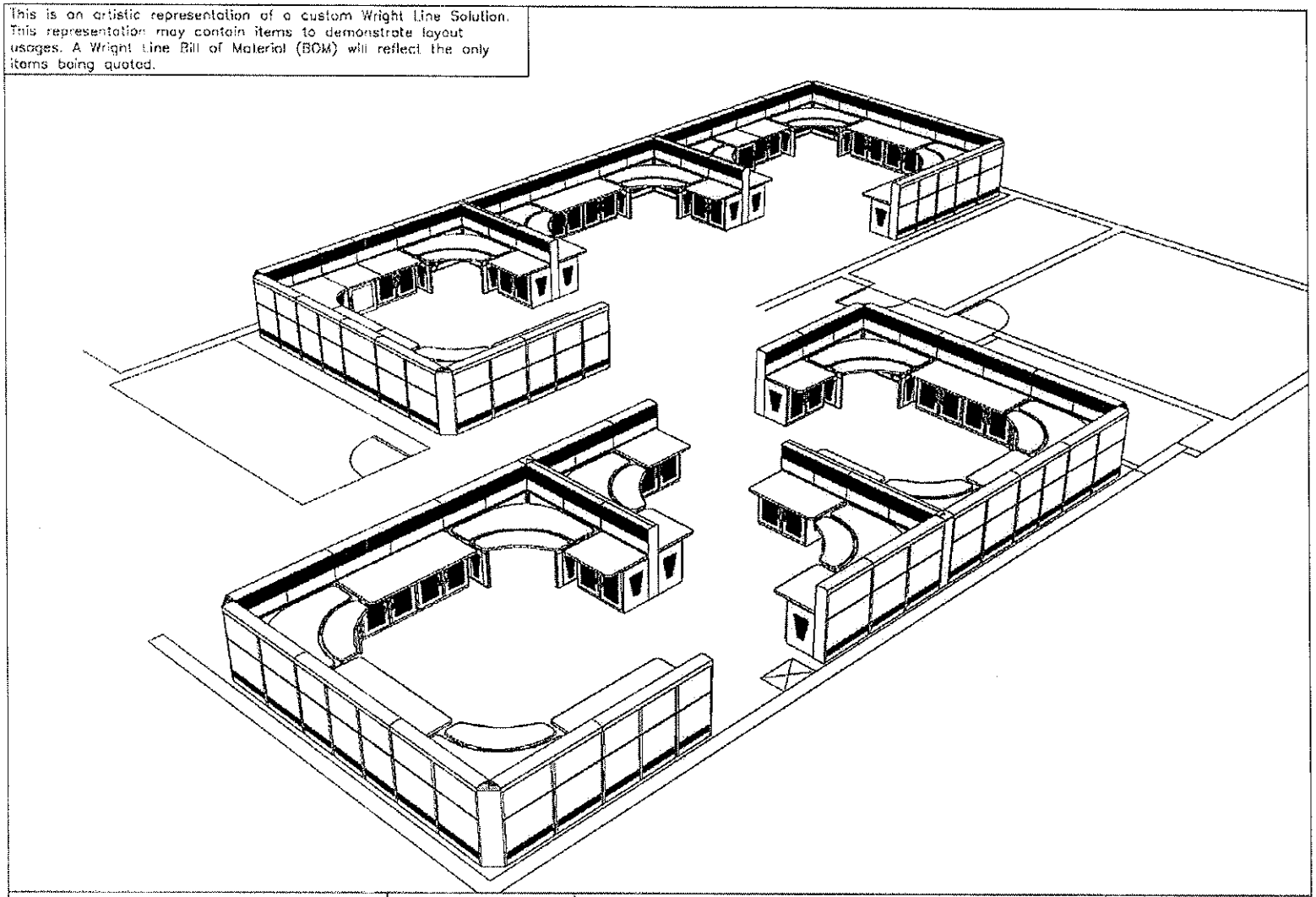
City of Hialeah Department	Portable New	Mobile New	Console New	Control New	Type PS/NPS	Reprogram P25 Ready	Flash to P25
Fire Department							
· XTL2500 (M)						10	
· XTL5000 (M)						10	
· XTL5000 (C)						16	
· XTS5000 (P)						205	
· APX6500 (M)						15	
Police Department							
· XTS2500 (P)						352	
· XTL2500 (M)						140	
· APX6500 (M)						140	
· APX7500 (M)						12	
City Hall Garage							
· XTS1500 model 1							3
Construction and Maintenance							
· XTS1500 model 1							2
· XTS1500 model 1.5							2
· XTS2500 model 1.5							1
· XTL5000							1
Fleet Maintenance							
· XTL2500							1
· XTS2500 model 1.5							2
· XTL5000							1
Occupational License							
· XTS1500 model 1.5							1
· XTS2500 model 1.5							1
Planning and Development							
· XTS1500 model 1							2
· XTL5000							1
· XTS2500							1
Recreation and Community							
· XTS1500 model 1.5							18
· XTL2500							2
· XTL2500							1

Streets				
· XTS1500 model 1.5				2
· XTS2500 model 1.5				4
· XTL2500				19
Telecommunications		2		
· XTL1500				8
· XTL2500				9
· XTL5000				1
Transit				
· XTL1500				15
Water and Sewer				
· XTS2500 model 1				14
· XTL2500			12	
· XTL5000			2	
Primary Dispatch Center		7		
Backup Dispatch Center		5		
Base Stations				
· Astro Spectra Plus			1	

APPENDIX B

E911/Dispatch Center Floor Plan

This is an artistic representation of a custom Wright Line Solution. This representation may contain items to demonstrate layout usages. A Wright Line Bill of Material (BOM) will reflect the only items being quoted.



wright·line technical environment solutions	Sales Representative: James De Nitto Souffterr:	Prepared for: City of Hialeah Floor Plan 	Product: PSAP Date: 07/16/08	Drawn by: Nataraj B Quote: 1-3917910

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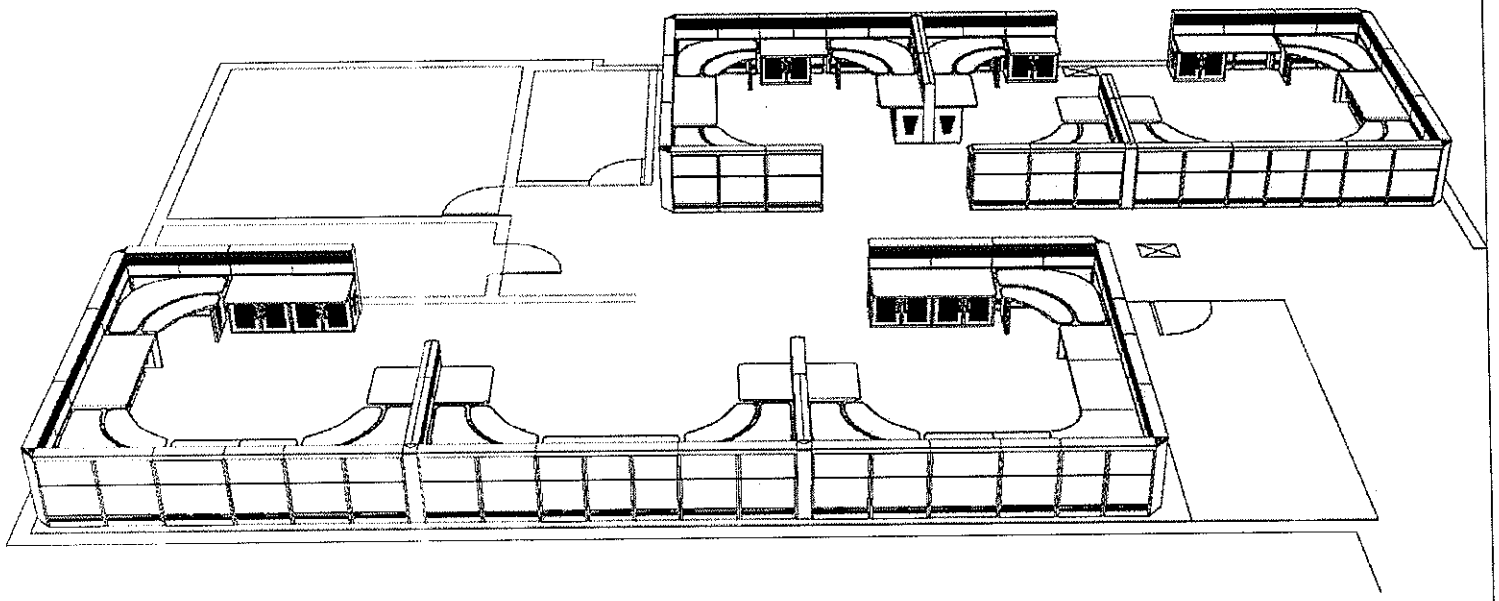
This is an artistic representation of a custom Wright Line Solution. This representation may contain items to demonstrate layout usages. A Wright Line Bill of Material (BOM) will reflect the only items being quoted.



wright·line
technical environment solutions

Sales Representative: James De Nitto Southern	Prepared for: City of Hialeah Floor Plan	Product: PSAP	Drawn by: Nataraj B
		Date: 07/16/08	Quote: 135 PS917910

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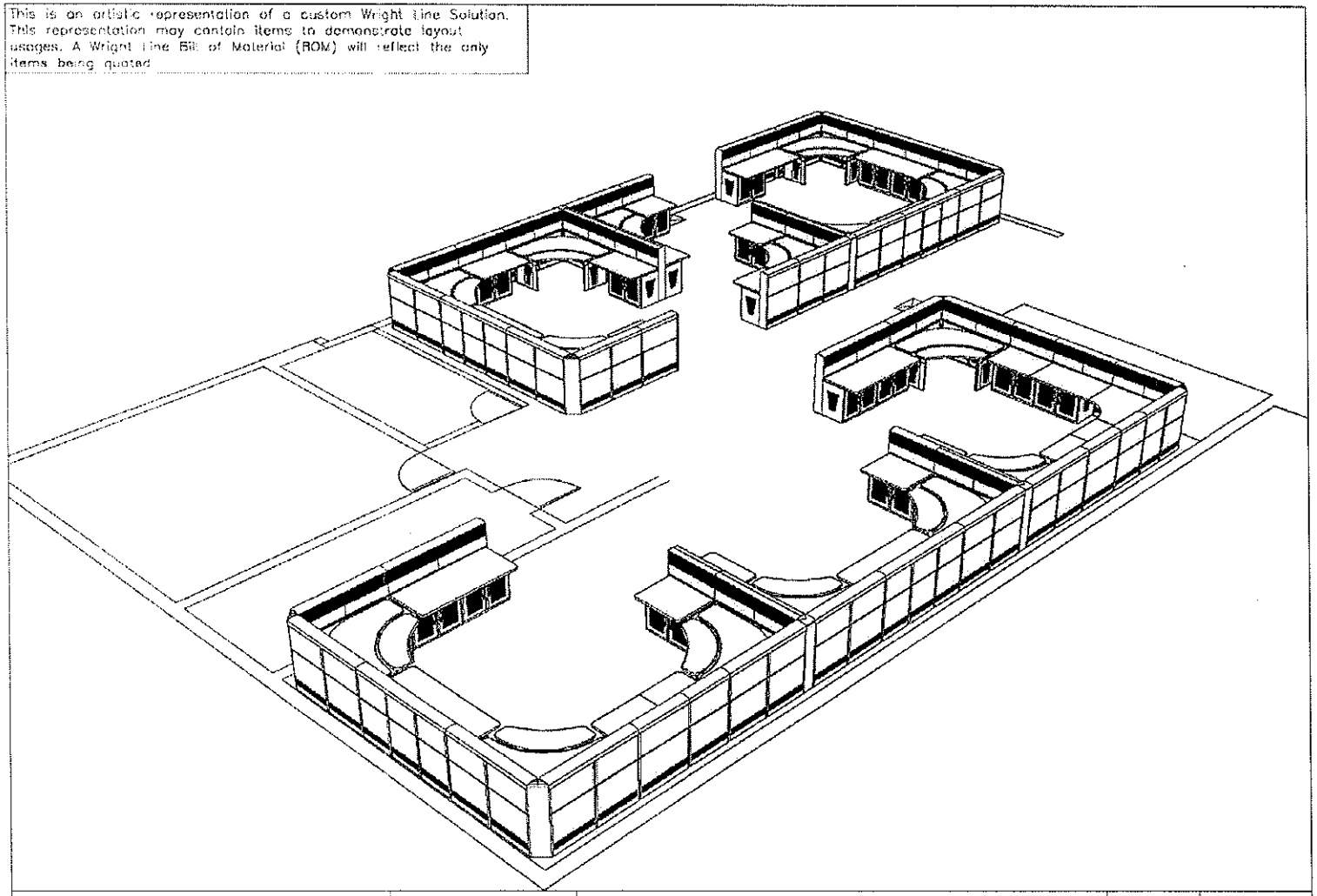
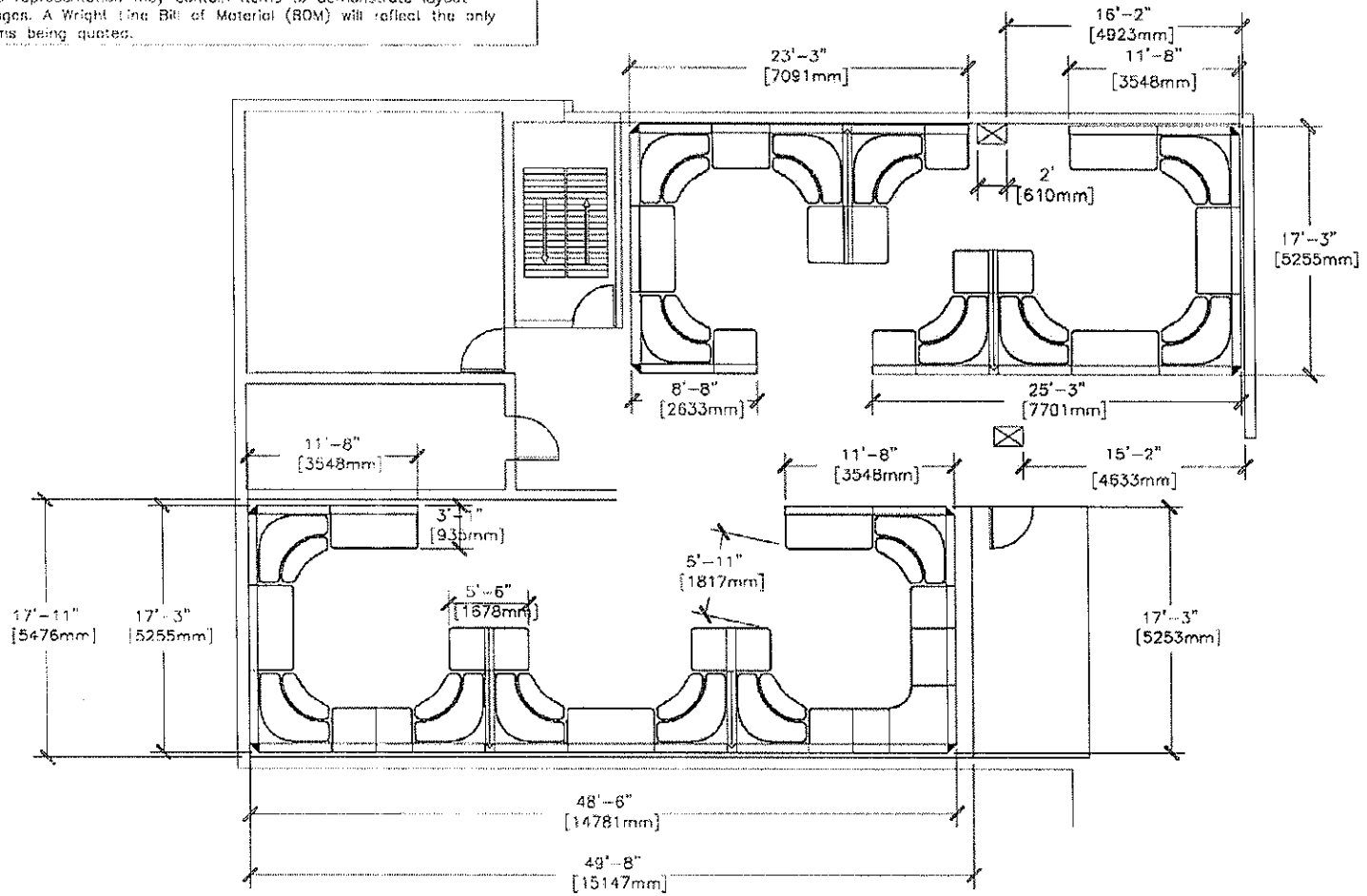
This is an artistic representation of a custom Wright Line Solution. This representation may contain items to demonstrate layout usages. A Wright Line Bill of Material (BOM) will reflect the only items being quoted.



wright·line technical environment solutions	Sales Representative: James De Nitto Southern	Prepared for: City of Hialeah Floor Plan 	Product: PSAP Date: 07/16/08	Drawn by: Nataraj B Quote: 135917910

{29647283:1}

This is an artistic representation of a custom Wright Line Solution. This representation may contain items to demonstrate layout usages. A Wright Line Bill of Material (BOM) will reflect the only items being quotes.



wright·line
technical environment solutions

Sales Representative:
James De Nitto

Southern

Prepared for:
City of Hialeah
Floor Plan

Product:	Drawn by:
PSAP	Nataraj B
Date:	Quote:
07/16/08	137-3917910

{29647283;1}

APPENDIX C

City of Hialeah Critical Building List

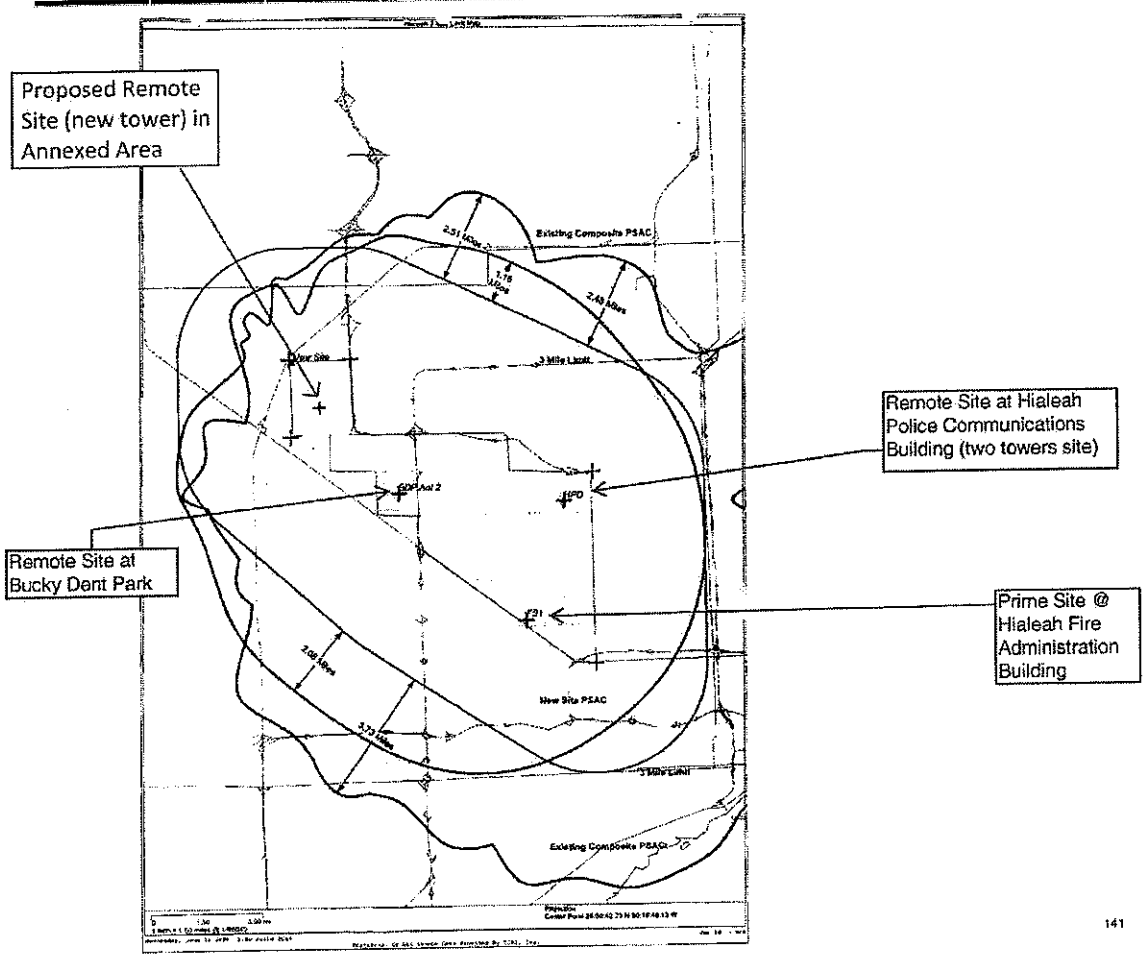
Agency	Address	City	Zip	Type	Note
Fire Station # 1	83 E. 5th Street	Hialeah	33010	Fire	
Fire Station # 2	4200 E. 8th Avenue	Hialeah	33013	Fire	
Fire Station # 3	800 W. 49th Street	Hialeah	33012	Fire	
Fire Station # 4	251 E. 12th Avenue	Hialeah	33010	Fire	
Fire Station # 5	1197 W. 74th Avenue	Hialeah	33014	Fire	
Fire Station # 6	780 W. 25th Street	Hialeah	33012	Fire	
Fire Station # 7	7590 W. 24th Street	Hialeah	33016	Fire	
Fire Station # 8	5405 W. 18th Avenue	Hialeah	33012	Fire	
Police Department HQ	795 E. 55th Street	Hialeah	33013	Police	
Police Training Center	810 E. 56th Street	Hialeah	33013	Police	
Police Substation #1	501 E. 4th Street	Hialeah	33010	Police	
Police Substation #2	2700 W. 8th Avenue	Hialeah	33012	Police	
Police Substation #3	7400 W. 10th Avenue	Hialeah	33014	Police	
Police Substation #4	7580 W. 24th Avenue	Hialeah	33016	Police	
City Hall	501 Palm Avenue	Hialeah	33010	City	
Maintenance Division	900 E. 56th Street	Hialeah	33013	City	
Hialeah Preston Water Plant	700 W. 2nd Avenue	Hialeah	33010	City	
Hialeah RO Water Plant	16600 NW 97th Avenue	Hialeah	33018	City	
Hialeah Hospital	651 E. 25th Sreet	Hialeah	33013	Hospital	Basement
Palm Springs General Hospital	1475 W. 49th Place	Hialeah	33012	Hospital	
Palmetto General Hospital	2001 W. 68th Street	Hialeah	33016	Hospital	
Bank Atlantic	7775 W. 33rd Avenue	Hialeah	33018	Bank	Vault
Bank of America	1 E. 49th Street	Hialeah	33013	Bank	Vault
Bank of America	8078 N.W. 103rd Street	Hialeah	33016	Bank	Vault
Bank of America	2478 W. 60th Street	Hialeah	33016	Bank	Vault
Bank of America	2170 W. 68th Street	Hialeah	33016	Bank	Vault
Bank United	1291 W. 49th Street	Hialeah	33012	Bank	Vault
Chase Bank	3349 W. 80th Street	Hialeah	33018	Bank	Vault
Chase Bank	401 W. 49th Street	Hialeah	33012	Bank	Vault
Chase Bank	1456 W. 49th Street	Hialeah	33012	Bank	Vault
Citibank	1001 W. 49th Street	Hialeah	33012	Bank	Vault
City National Bank	2855 E. 8th Avenue	Hialeah	33013	Bank	Vault
Continental National Bank	611 W. 49th Street	Hialeah	33012	Bank	Vault
Continental National Bank	9300 NW 77th Avenue	Hialeah	33016	Bank	Vault
First Bank of Miami	1255 W. 49th Street	Hialeah	33012	Bank	Vault
Interamerican Bank	4090 W. 12th Avenue	Hialeah	33012	Bank	Vault
Mercantile Commerce Bank	1601 E. 4th Avenue	Hialeah	33010	Bank	Vault
Ocean Bank	1801 W. 4th Avenue	Hialeah	33010	Bank	Vault
Ocean Bank	790 W. 49th Street	Hialeah	33012	Bank	Vault
Peoples Credit Union	8200 W. 33rd Avenue	Hialeah	33018	Bank	Vault
Popular Community Bank	1620 W. 49th Street	Hialeah	33012	Bank	Vault

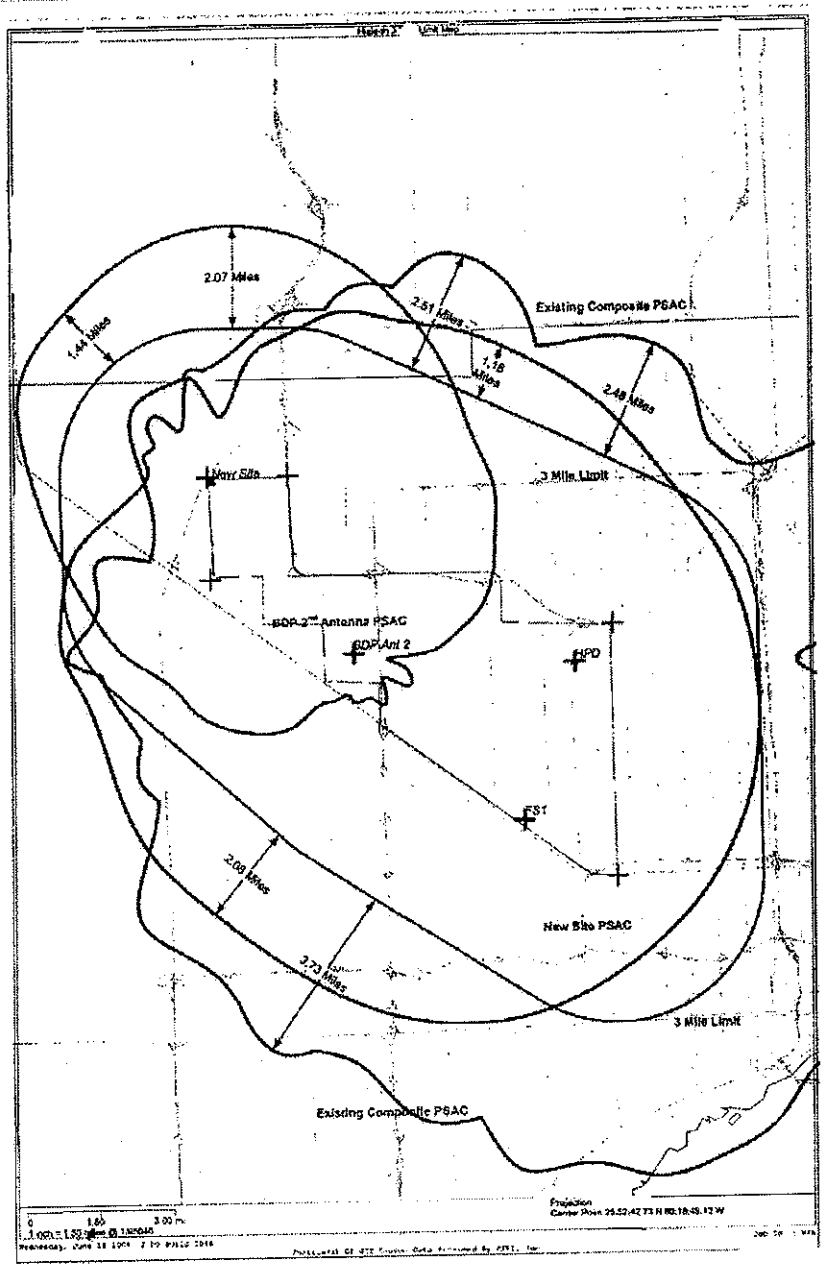
Ready State Bank	3700 W. 12th Avenue, #1	Hialeah	33012	Bank	Vault
Regions Bank	3700 W. 12th Avenue	Hialeah	33012	Bank	Vault
Regions Bank	4375 E. 4th Avenue	Hialeah	33013	Bank	Vault
Sabadell United Bank	1751 W. 49th Street	Hialeah	33012	Bank	Vault
Space Coast Credit Union	2150 W. 68th Street, #101	Hialeah	33016	Bank	Vault
Space Coast Credit Union	1120 W. 49th Street	Hialeah	33012	Bank	Vault
Suntrust Bank	2400 W. 60th Street	Hialeah	33014	Bank	Vault
Suntrust Bank	1740 W. 49th Street	Hialeah	33012	Bank	Vault
TD Bank	801 W. 49th Street	Hialeah	33012	Bank	Vault
Total Bank	5410 W. 16th Avenue	Hialeah	33012	Bank	Vault
US Century Bank West	3198 W. 76th Street	Hialeah	33018	Bank	Vault
Wells Fargo Bank	1900 W. 49th Street	Hialeah	33012	Bank	Vault
Home Depot	1590 W. 4th Street	Hialeah	33012	Commercial	
Home Depot	950 S.E. 12th Street	Hialeah	33010	Commercial	
Lowes	1650 W. 37th Street	Hialeah	33012	Commercial	
Walmart	400 W. 49th Street	Hialeah	33012	Commercial	
Westland Mall	1675 W. 49th Street	Hialeah	33012	Commercial	
Hialeah Park Race Track	2200 E. 4th Avenue	Hialeah	33013	Commercial	Basement

Note: RFP coverage requirements also apply to the basements and vaults of buildings listed on the Critical Building list.

APPENDIX D

City of Hialeah Contour Map


Proposed Remote Site (new tower) in Annexed Area
Remote Site at Hialeah Police Communications Building (two towers site)
Remote Site at Bucky Dent Park
Prime Site @ Hialeah Fire Administration Building
Existing Composite PSAC
New Site PSAC
Existing Composite PSAC
2.51 Miles
2.49 Miles
2.58 Miles
3.73 Miles
3 Mile Limit
3 Mile Limit
141


2.07 Miles
1.44 Miles
2.51 Miles
1.18 Miles
2.48 Miles
Existing Composite PSAC
New Site
3 Mile Limit
BDP 2nd Antenna PSAC
BDP Ant 2
HPD
FST
2.09 Miles
3.73 Miles
New Site PSAC
3 Mile Limit
Existing Composite PSAC

APPENDIX E

PROPOSAL RESPONSE SUBMITTAL FORM:

P-25 PUBLIC SAFETY RADIO SYSTEM
RFP NO.: 2014-15-2000-00-001

FEIN NO. : ____/____-____ / ____ / ____ / ____ / ____ / ____ / ____
(Proposer's Federal Employer Identification Number) If none, Proposer's Social Security Number

The undersigned Proposer certifies that this proposal is submitted in accordance with the proposal specifications and conditions governing this proposal, and that the Proposer will accept any award(s) made to him/her as a result of this proposal.

FIRM NAME: _____

STREET ADDRESS: _____

CITY/STATE/ZIP CODE: _____

TELEPHONE NO.: _____ FAX NO.: _____

E-MAIL: _____

By signing this document the Proposer agrees to all of the terms and conditions of this Request for Proposal.

AUTHORIZED SIGNATURE _____ Date _____

PERSON AUTHORIZED TO ENTER INTO CONTRACTUAL AGREEMENT

PRINT NAME OF PROPOSER'S REPRESENTATIVE_____

TITLE OF PROPOSER'S REPRESENTATIVE _____

THE EXECUTION OF THIS FORM CONSTITUTES THE UNEQUIVOCAL OFFER OF PROPOSER TO BE BOUND BY THE TERMS OF ITS PROPOSAL. FAILURE TO SIGN THIS SOLICITATION WHERE INDICATED ABOVE BY AN AUTHORIZED REPRESENTATIVE SHALL RENDER THE PROPOSAL NON-RESPONSIVE. THE CITY MAY, HOWEVER, IN ITS SOLE DISCRETION, ACCEPT ANY PROPOSAL THAT INCLUDES AN EXECUTED DOCUMENT WHICH UNEQUIVOCALLY BINDS THE PROPOSER TO THE TERMS OF ITS OFFER.

APPENDIX F

SUBMIT PROPOSALS TO: CITY OF HIALEAH OFFICE OF THE CITY CLERK 501 PALM AVENUE, 3rd Floor HIALEAH, FL 33010			CITY OF HIALEAH REQUEST FOR PROPOSAL Proposer Acknowledgment
Page 1 of 3	Telephone Number (305) 883-5857	Mailing Date	Proposal No. 2014-15-2000-00-001
Proposal may not be withdrawn within 180 DAYS after the proposal opening.		Proposal Title P-25 PUBLIC SAFETY RADIO SYSTEM RFP No.: 2014-15-2000-00-001	

	Reason for "no bid"	
NAME OF VENDOR	AREA CODE	TELEPHONE NUMBER
MAILING ADDRESS	BUSINESS ADDRESS	
CITY – STATE – ZIP CODE		
I certify that this proposal is made without prior understanding agreement, or connection with any corporation, firm or person submitting a proposal for the same materials, supplies, or equipment, and is in all respects fair and with-out collusion or fraud. I agree to abide by all conditions of this proposal and the Agreement. I certify that I am authorized to sign this proposal for the Proposer.	AUTHORIZED SIGNATURE (MANUAL)	
	AUTHORIZED SIGNATURE (TYPED) TITLE	

GENERAL CONDITIONS

SEALED PROPOSALS: This form must be executed and submitted in a sealed envelope with the Proposer's Proposal Package. Proposals not submitted with this proposal form may be rejected.

1. EXECUTION OF PROPOSAL: Each Proposal must contain a manual signature of the Proposer's authorized representative in the space provided above.

2. NO BID: If not submitting a proposal, respond by returning this form, marking it "No Bid", and explain the reason in the space provided above. Repeated failure to quote, without sufficient justification, shall be cause for removal of the supplier's name from the proposal mailing list. Note: To qualify as a respondent, Proposer must submit a "No Bid" and it must be received no later than the stated proposal opening date and hour.

3. PROPOSAL OPENING: Shall be at a public opening commencing at the time and date specified in the Solicitation. It is the Proposer's responsibility to assure that its proposal is delivered at the proper time

and place of the proposal opening. Proposals which for any reason are not so delivered will not be considered. Offers by telegram or telephone are not acceptable.

4. PROOF OF CAPABILITY: The Proposer may be required before the award of any contract, to show to the complete satisfaction of the City Council that it has the necessary facilities, ability and financial resources to perform the proposal requirements in compliance with the Agreement.

5. PATENTS AND ROYALTIES: The Proposer, without exception, shall indemnify and save harmless the City of Hialeah and its employees from liability of any nature or kind, including cost and expenses for or on account of any copyrighted, patented, or unpatented invention, process or article manufactured or used in the performance of the contract, including its use by the City of Hialeah, Florida. If the Proposer uses any design, device, or materials covered by letter, patent or copyright, it is mutually agreed and understood without exception that the proposal prices shall include all royalties or cost arising from the use of such design, device, or materials, in any way involved in the work.

6. RATE OF WAGES: When applicable, the rate of wages for work covered by a public contract for those employed by any contractor or subcontractor shall not be less that the prevailing rate of wages for similar skills or classifications or work in the City of Hialeah. The Division of Labor and Employment Opportunities, Tallahassee, Florida, will furnish the prevailing wage rates in the City of Hialeah, upon request.

7. PRICES TERMS AND PAYMENT: Firm prices shall be quoted; the prices shall be typed or printed in ink and shall include all charges, unless otherwise explicitly stipulated in the Agreement.

   (a) TAXES: A Proposer shall include all applicable taxes in its proposal. A Proposer will not be excused from payment of state sales or transportation taxes or other applicable taxes. A Proposer shall not base a proposal price on an assumption that that the City will utilize its tax exemption to purchase or order materials, equipment, etc. Any tax liability or tax payment resulting from any determination or interpretation of any law, rule, regulation or opinion is the sole responsibility of the Proposer.

   (b) DISCOUNTS: Proposers may offer a cash discount for prompt payment: however, such discounts shall not be considered in determining the highest net price for proposal evaluation purposes. Proposers are encouraged to reflect cash discounts in the prices quoted.

   (c) MISTAKES: Proposers are expected to examine the Agreement, specifications, delivery schedule, proposal prices, and all instructions pertaining to supplies and/or services. Failure to do so will be at Proposer's risk.

   (d) SAFETY STANDARDS: All of Proposer's activities under the Agreement shall comply with the applicable requirements of the Occupational Safety and Health Act and any standards thereunder.

8. AWARDS: As the best interest of the City may require, the City reserves its right to make award(s), or reject any and all proposals, or waive any minor informality or technicality in proposals received

9. INFORMATION AND DESCRIPTIVE LITERATURE: Proposers must furnish all information requested in the spaces provided on the proposal form. Each Proposer may submit with his proposal, descriptive literature and/or complete specifications covering the Proposer's facilities and equipment.

10. INTERPRETATIONS: Any questions concerning conditions and specifications shall be directed to the City, as provided in the Solicitation. Inquiries must reference the date of proposal opening and title. Failure to comply with this condition will result in Proposer waiving his right to dispute the proposal specifications.

11. PRICE ADJUSTMENTS: Any price decrease effectuated during the contract period either by reason of market change or on the part of the Contractor to other customers shall be passed on to the City of Hialeah.

12. ADVERTISING: In submitting a proposal, Proposer agrees not to use the results therefrom as a part of any commercial advertising.

13. LIABILITY: The Proposer shall hold and save the City of Hialeah, its officers, agents, and employees harmless from liability of any kind in the performance of the Agreement.

14. EQUAL EMPLOYMENT OPPORTUNITY: The City of Hialeah endorses Equal Employment and incorporates the non-discrimination clause in this Request for Proposal.

15. SPECIFICATION SILENCE: Apparent silence on the specifications as to any details, or the apparent omission from it of a detailed description concerning any point, shall be regarded as meaning only the best commercial practices will prevail and that only materials and workmanship of first quality are to be provided. All interpretations of the Specifications shall be made upon this statement.

NOTE: THIS PROPOSAL CONSTITUTES AN OFFER FROM THE PROPOSER. IF ANY OR ALL PARTS OF THE PROPOSAL ARE ACCEPTED BY THE CITY OF HIALEAH, AN AUTHORIZED REPRESENTATIVE OF THE CITY SHALL AFFIX HIS/HER SIGNATURE TO THE AGREEMENT, WHICH SHALL THEN CONSTITUTE THE WRITTEN AGREEMENT BETWEEN THE PARTIES. THE CITY HEREBY RELIES UPON ANY REPRESENTATIONS BY THE PROPOSER AS ARE CONTAINED HEREIN.

APPENDIX G

PURCHASING DIVISION
CITY OF HIALEAH DISCLOSURE AFFIDAVIT

I _____ being first duly sworn, state:

The full legal name and business address* of the Person or entity contracting or transacting business with the City of Hialeah are:

_____

_____

_____

Phone Number:_____ Fax Number: _____

If the contract or business transaction is with a corporation, the full legal name and business address* shall be provided for each officer and director and each stockholder who holds directly or indirectly five percent (5%) or more of the corporation's stock. If the contract or business transaction is with a partnership, the full legal name and business address* shall be provided for each partner. If the contract or business transaction is with a trust, the full legal name and address* shall be provided for each trustee and each beneficiary. All such names and addresses are:

_____

_____

_____

The full legal names and business addresses* of every other individual (other than subcontractors, material men, suppliers, laborers, or lenders) who have, or will have, any interest (legal, equitable, beneficial or otherwise) in the contract or business transaction with the City of Hialeah are:

_____

_____

Proposer's Tax ID Number (F.E.I.N) or Social Security Number: _____ - _____

PROOF OF CORPORATE STATUS

Please provide proof of corporate status. Each corporate Proposer must demonstrate it is an active corporation in good standing in the State of Florida or any other State. If incorporated in a State other than Florida, then please provide proof that the corporation is registered to do business in the State of Florida in addition to proof of active corporate status. If incorporated in Florida, a computer print-out from the Department of State will be sufficient proof of corporate status. Proof of good standing also is required for all partnerships, limited partnerships, joint-ventures, etc.

_____ _____

LEGAL SIGNATURE OF AFFIANT (Print or Type Legal Name of Affiant)

Sworn to and subscribed before me this _____ day of _____, _____

Notary Public - State of: _____

My Commission Expires: _____

_____ **NOTARY SEAL**

Print/Type and Stamp commissioned name of Notary Public

Personally known __or Produced Identification __
Type of Identification Produced _____

****Post office box addresses are not acceptable.**

APPENDIX H

NONCOLLUSION AFFIDAVIT OF PRIME PROPOSER

State of _____)

County of _____)

_____, being first duly sworn,
deposes and says that:

(1) He/she is _____ [title] of _____ [name of entity], the Proposer that has submitted the attached Proposal:

(2) He/she is fully informed respecting the preparation and contents of the attached Proposal and of all pertinent circumstances respecting such Proposal:

(3) Such Proposal is genuine and is not a collusive or sham Proposal;

(4) Neither the said Proposer nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed directly or indirectly with any other Proposer, firm or person to submit a collusive or sham Proposal in connection with the Contract for which the attached Proposal has been submitted or to refrain from bidding in connection with such Contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other Proposer, firm or person, or to fix any overhead, profit or cost element of the Proposal price or the Proposal price any other Proposer, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the **City of Hialeah** (Local Public Agency) or any person interested in the proposed Contract; and

The price or prices quoted in the attached Proposal are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Proposer or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

(Name) _____

_____
(Title)

Subscribed and sworn to before me

This _____ day of _____, 20____

_____

_____
(Title)

My commission expires _____

APPENDIX I

SWORN STATEMENT PURSUANT TO SECTION 287.133(3)(a), FLORIDA STATUTES, ON PUBLIC ENTITY CRIMES

THIS FORM MUST BE SIGNED AND SWORN TO IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICIAL AUTHORIZED TO ADMINISTER OATHS.

1. This sworn statement is submitted to the City of Hialeah, Florida, by _____
_____
(print individual's name and title)

For _____
(print name of entity submitting sworn statement)

whose business address is

_____

_____

and (if applicable) its Federal Employer Identification Number (FEIN) is _____

(If the entity has no FEIN, include the Social Security Number of the individual signing this sworn statement: _____.)

2. I understand that a "public entity crime" as defined in Paragraph 287.133(1) (g), **Florida Statutes,** means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency or political subdivision of any other state or of the United States, including, but not limited to, any proposal or contract for goods or services to be provided to any public entity or an agency or political subdivision of any other state or of the United States and involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.

3. I understand that "convicted" or "conviction" as defined in Paragraph 287.133(1) (b), **Florida Statutes,** means a finding of guilt or a conviction of a public entity crime, with or without an adjudication of guilt, in any federal or state trial court of record relating to charges brought by indictment or information after July 1, 1989, as a result of a jury verdict, non-jury trial, or entry of a plea of guilty or nolo contendere.

4. I understand that an "affiliate" as defined in Paragraph 287.133 (1) (a), **Florida Statutes,** means:

   1. A predecessor or successor of a person convicted of a public entity crime; or
   2. An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate. The ownership by one person of shares constituting a controlling interest in another person, or a pooling of equipment or income among persons when not for fair market value under an arm's length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered an affiliate.

5. I understand that a "person" as defined in Paragraph 287.133 (1) (e) **Florida Statutes,** means any natural person or entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which proposals or applies to proposal on contracts for the provision of goods or services let by a public entity, or which otherwise transacts or applies to transact business with a public entity. The term "person"

includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.

6. Based on information and belief, the statement which I have marked below is true in relation to the entity submitting this sworn statement. (Indicate which statement applies.)

____ Neither the entity submitting this sworn statement, nor any of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, nor any affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.

____ The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.

____ The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989. However, there has been a subsequent proceeding before an Administrative Law Judge of the State of Florida, Division of Administration Hearings and the Final Order entered by the Administrative Law Judge determined that it was not in the public interest to place the person or entity submitting this sworn statement on the convicted vendor list. (Attach a copy of the final order.)

I UNDERSTAND THAT THE SUBMISSION OF THIS FORM TO THE CONTRACTING OFFICER FOR THE PUBLIC ENTITY IDENTIFIED IN PARAGRAPH 1 (ONE) ABOVE IS FOR THAT PUBLIC ENTITY ONLY AND, THAT THIS FORM IS VALID THROUGH DECEMBER 31 OF THE CALENDAR YEAR IN WHICH IT IS FILED. I ALSO UNDERSTAND THAT I AM REQUIRED TO INFORM THE PUBLIC ENTITY PRIOR TO ENTERING INTO A CONTRACT IN EXCESS OF THE THRESHOLD AMOUNT PROVIDED IN SECTION 287.017, FLORIDA STATUTES FOR CATEGORY TWO OF ANY CHANGE IN THE INFORMATION CONTAINED IN THIS FORM.

_____
(Signature)

Sworn to and subscribed before me this _____ day of _____, 2014.

Personally known _____

OR Produced Identification _____

_____
(Type of identification)

_____
Notary Public - State of _____

_____
(Printed typed or stamped
commissioned name of notary public)

APPENDIX J

INSURANCE REQUIREMENTS

See Insurance Check List for applicability to this contract.

The Contractor shall be responsible for its work and every part thereof, including all materials, tools, appliances and property of every description used in connection therewith. The Contractor shall specifically and distinctly assume all risks of damage or injury to property or persons used or employed on or in connection with the work and of all damage or injury to any person or property, wherever located, resulting from any action or inaction of the Contractor under the Agreement for Public Safety Radio System (Agreement) or in connection with the work.

The Contractor shall, during the work under this Agreement, including extra work in connection therewith:

Maintain Worker's Compensation and Employer's Liability Insurance to meet the statutory requirements of the State of Florida, to protect themselves from any liability or damage which may arise by virtue of any statute or law in force or which may hereafter be enacted.

Maintain General Liability Insurance in amounts prescribed by the City to protect the Contractor in the interest of the City against all risks of injury to persons (including death) or damage to property wherever located resulting from any action or operation under the Agreement or in connection with the work.

Maintain Automobile Liability Insurance, including Property Damage, covering all used or operated automobiles and equipment used in connection with the work.

When naming the City of Hialeah as an additional insured onto the Contractor's policies, the insurance companies hereby agree and will endorse the policies to state that the City will not be liable for the payment of any premiums or assessments. An endorsement to the policy(ies) shall be issued accordingly and the certificate will state the above.

The insurance coverage shall extend to and include the contractual indemnity and hold harmless language contained in the Agreement.

Original, signed certified Insurance Certificates evidencing such insurance and such endorsements as prescribed herein shall be filed by the Contractor, before the work is started, with the City of Hialeah. The certificate must state the Solicitation Number and Title.

Products and Completed Operations Liability shall be provided, as stated in the Insurance Check List.

The Contractor will secure and maintain policies for subcontractors. All policies shall be made available to the City upon demand.

The Contractor shall take note of the indemnification contained in the Agreement and shall obtain and maintain contractual liability insurance in adequate limits for the sole purpose of protecting the City of Hialeah under the Agreement from any and all claims arising out of the Contractor's operations.

Further, the Contractor will notify its insurance agent without delay of the existence of the indemnification requirement contained within the Agreement, and furnish a copy of the Agreement to the insurance agent.

The City shall be named as additional insured on the Automobile and General Liability policy(ies) with proof to be stated on the Certificates provided to the City and this coverage to be primary to all other coverage the City possesses.

SUPERVISION

Contractual and any other Liability Insurance provided under the Agreement shall not contain a supervision, inspection, engineering services exclusion that would preclude the City from supervising and/or inspecting the Contractor's work. The Contractor shall assume all on-the-job responsibility as to the control of Persons directly employed by the Contractor and/or the subcontractor and Persons employed by the subcontractor.

CONTRACTS

Nothing contained in the Solicitation or Agreement shall be construed as creating any contractual relationship between any subcontractor and the City.

The Contractor shall be as fully responsible to the City for the acts and omissions of the subcontractors and of persons employed by them, as the Contractor is for acts and omissions of Persons directly employed by the Contractor.

PROTECTION

Precautions shall be exercised at all times for the protection of Persons, including employees, and property. All existing structures, utilities, roads, services, trees, shrubbery, etc., shall be protected against damage or interrupted service at all times by the Contractor during the term of the Agreement. The Contractor shall be held responsible for any damage to any Person or property occurring by reason of the Contractor's operation under the Agreement.

CROSS LIABILITY

It is understood and agreed that the inclusion of more than one insured under the Contractor's policy shall not restrict the coverage provided by the policy for one insured hereunder with respect to a liability claim or suit by another insured hereunder or an employee of such other insured and that with respect to claims against any insured hereunder, other insurers hereunder shall be considered members of the public; but the provisions of this Cross Liability clause shall apply only with respect to liability arising out of the ownership, maintenance, use, occupancy or repair for such portions of the premises insured hereunder as are not reserved for the exclusive use of occupancy of the insured against whom claim is made or suit is filed.

CERTIFICATE OF INSURANCE

On an Accord Certificate of Insurance binder, on the Cancellation Clause, the following shall be deleted: The word "endeavor" as well as "...but failure to mail such notice shall impose no obligation or liability of any kind upon the company".

OUT-OF-STATE NON-RESIDENT AGENT

When a certificate is issued by an out-of-state non-resident agent with a "920" License, the name, address and telephone number of the Florida Resident Agent must be listed in the space provided on the checklist and on the Certificate of Insurance provided.

SMALL DEDUCTIBLE POLICIES

All policies issued to cover the insurance requirements herein shall provide full coverage from the first dollar of exposure. No deductibles will be allowed in any policies issued on this contract unless specific safeguards have been established to assure an adequate fund for payment of deductibles by the insured. These safeguards shall be in form of escrow accounts or other method established by the Risk Manager to safeguard to the City's interests and those interests of any claimants under the contractor's policies.

APPENDIX K

CITY OF HIALEAH
INSURANCE CHECK LIST

INSURANCE		LIMITS
X	1. WORKERS' COMPENSATION AND EMPLOYEE'S LIABILITY	STATUTORY LIMITS OF THE STATE OF FLORIDA
X	2. COMMERCIAL GENERAL LIABILITY PREMISES OPERATIONS INCLUDED; PRODUCTS AND COMPLETED OPERATIONS INCLUDED; INDEPENDENT CONTRACTORS (O.C.P.) INCLUDED; ELEVATORS INCLUDED; SUPERVISION EXCLUSION DELETED; PERSONAL INJURY LIABILITY INCL	$1,000,000 SINGLE LIMIT FOR BODILY INJURY AND PROPERTY DAMAGE COMBINED EACH OCCURRENCE
X	3. BROAD FORM PROPERTY DAMAGE ENDORSEMENT	
X	4. CONTRACTUAL INDEMNITY/HOLD HARMLESS ENDORSEMENT EXACTLY AS WRITTEN IN "INSURANCE REQUIREMENTS' OF SPECIFICATIONS	$1,000,000 SINGLE LIMIT FOR BODILY INJURY & PROPERTY DAMAGE COMBINED EACH OCCURRENCE
X	5. AUTOMOBILE LIABILITY OWNED NON-OWNED/HIRED AUTOMOBILES INCLUDED	$1,000,000 SINGLE LIMIT FOR BODILY INJURY & PROPERTY DAMAGE COMBINED EACH OCCURRENCE
X	6. UMBRELLA LIABILITY	$1,000,000 EXCESS OF ALL PRIMARY COVERAGE
___	7. GARAGE LIABILITY	$1,000,000 SINGLE LIMIT FOR BODILY INJURY AND PROPERTY DAMAGE COMBINED EACH OCCURRENCE
___	8. GARAGEKEEPER'S LEGAL LIABILITY	$100,000 EACH OCCURRENCE
X	9. THE CITY MUST BE NAMED BY ENDORSEMENT AS ADDITIONAL INSURED ON THE INSURANCE POLICY AND THE FOLLOWING MUST ALSO BE STATED ON THE CERTIFICATE. "THESE COVERAGES ARE PRIMARY AND NON-CONTRIBUTORY TO ALL OTHER COVERAGES THE CITY POSSESSES FOR THIS CONTRACT ONLY."	
___	10. TEACHERS PROFESSIONAL LIABILITY	$1,000.000 EACH CLAIM
___	11. LIQUOR LEGAL LIABILITY	$1,000,000 EACH OCCURRENCE

CITY OF HIALEAH
INSURANCE CHECK LIST (cont'd)

INSURANCE	LIMITS
___ 12. CROSS LIABILITY OR SEVERABILITY OF INTERESTS CLAUSE ENDORSEMENT	
___ 13. XCU PROPERTY DAMAGE EXCLUSION DELETED AND THIS COVERAGE WILL PROVIDED	
___ 14. BUILDERS RISK	FULL CONSTRUCTION COSTS OF THE PROJECT
___ 15. OTHER INSURANCE AS INDICATED BELOW: N/A	
X 16. THIRTY (30) DAYS CANCELLATION NOTICE REQUIRED	
X 17. BEST'S GUIDE RATING	A-X OR BETTER OR ITS EQUIVALENT
X 18. THE CERTIFICATE MUST STATE THE BID NUMBER AND TITLE	
___ 19. CYBER LIABILITY	$1,000,000 EACH CLAIM
___ 20. POLLUTION LIABILITY	$1,000,000 EACH CLAIM
___ 21. ERRORS & OMMISSIONS/PROFESSIONAL LIABILITY	$1,000,000 EACH CLAIM

PROPOSER AND INSURANCE AGENT STATEMENT:
We understand the Insurance Requirements of this Solicitation and we recognize that evidence of insurability may be required within five (5) days after Proposals are opened.

Proposer	Insurance Agency
Signature of Proposer	Signature of Proposer's Agent
Signature of Florida Resident Agent	Agent's Errors and Omissions Policy:
Name and Location of Agency	Policy Company; Expiration Date; Amount of Coverage; Policy Number

APPENDIX L

ASSIGNMENT OF ANTITRUST CLAIMS

For, and in recognition of, good and valuable consideration,, receipt of which is hereby acknowledged,

_____,
Company Name

acting herein by and through _____,
Individual Name

its _____ and duly authorized agent,
Title of Individual's Position

hereby conveys, sells, assigns and transfers to the City of Hialeah, Florida, all rights, title and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of Florida for price fixing, relating to the particular goods or services purchased or acquired by the City of Hialeah, Florida pursuant to the City's RFP No. 2014-15-2000-00-001 for the Public Safety Radio System and the City's Agreement.

_____
Date

_____
Name

_____
Signature

_____
Title

_____
Name of Company

APPENDIX M

PROPOSER'S QUALIFICATIONS AND REFERENCES

1. To assist the City of Hialeah in determining whether the Proposer is qualified to do the work set forth in the Proposal and Agreement, the Proposer shall furnish hereunder a list of references who are qualified to judge the Proposer's qualifications and experience in providing work of a similar nature to that which the Proposer will perform for the City. For each reference, please provide a name, address, phone number, and e-mail address (if available).

2. The Proposer shall list its previous experience with similar projects, but shall not list more than ten (10) projects.

3. The Proposer shall list the names and addresses of each Person and firm that is a principal in the Proposer.

4. The Proposer shall list the names of the Proposer's executives that will give personal attention to the Proposer's work under the Agreement.

APPENDIX N

PROPOSER'S SUBCONTRACTORS

If the Proposer will have any subcontractors, the Proposer shall provide: (a) the name and address of each subcontractor; (b) the name and telephone number of the subcontractor's contact person; and (c) a description of the work that will be performed by each subcontractor. _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

END OF STATEMENT OF PROPOSER'S QUALIFICATIONS

APPENDIX O

Guidelines and General Information

CITY OVERVIEW

Hialeah, Florida (pop. 235,000) is a diverse community, ideally located midway between Miami and Fort Lauderdale and encompasses approximately 23 square miles. As the fifth largest city in the State of Florida, Hialeah is committed to growth in its business community, while also focusing on issues such as education, the arts, leisure activities and sustainability to provide a viable future for our residents and preserve the City's rich history since its incorporation in 1925.

The City currently has 1300+ employees and provides a wide range of governmental services including public safety/police services, parks and recreation, public works, water and sewer, planning, building and zoning, code enforcement, and community development to its citizens.

The City is a very large consumer of goods and services and the purchasing decisions of our employees and contractors can positively or negatively affect the environment. By including environmental considerations in our procurement decisions, along with our traditional concerns with price, performance and availability, we will remain fiscally responsible while promoting practices that improve public health and safety, reduce pollution, and conserve natural resources.

REQUEST FOR PROPOSAL

This Request for Proposal is extended to any Person, company, and organization that can satisfy the requirement(s) specified herein. The requirements presented in this Request for Proposal represent the City's anticipated needs.

PUBLIC ENTITY CRIME/ DISCRIMINATORY VENDOR LIST

The *Public Entity Crime Affidavit Form*, **(Form "A-1")** attached to this Request for Proposal, includes documentation that shall be executed by an individual authorized to bind the Proposer. Any Proposer, or any of its suppliers, subcontractors, or consultants who shall provide goods and services which are intended to benefit the City, shall not be a convicted vendor or included on the discriminatory vendor list. If the Proposer or any affiliate of the Proposer has been convicted of a public entity crime or has been placed on the discriminatory vendor list, a period longer than 36 months must have passed since that person was placed on the convicted vendor or discriminatory vendor list. The Proposer further understands and accepts that any contract issued as a result of this Invitation for Proposal shall be either voidable or subject to immediate termination by the City. In the event there is any misrepresentation or lack of compliance with the mandates of Section 287.133 or Section 287.134, respectively, Florida Statutes. The City in the event in such termination, shall not incur any liability to the Proposer for any goods, services or materials furnished.

LOBBYING

All Proposers, their agents and proposed sub-consultants or subcontractors, are hereby placed on notice that neither the City Council Members, nor any evaluation committee members, employees of the City or employees of any other project sponsoring agencies shall be lobbied either individually or collectively regarding this Invitation for Proposal. Proposers, their agents and proposed sub-consultants or subcontractors are hereby placed on notice that they are prohibited from contacting any of these individuals for any purpose relating to the Request for Proposal (e.g., general information, meetings of introduction, meals, etc.). Any Proposal submitted by a Proposer, its agents and potential subconsultants or subcontractors who violate these guidelines will not be considered for review. The Purchasing Director, or designee, shall be the only point of contact for questions and/or clarifications concerning the Request for Proposal, the selection process and the negotiation and award procedures.

SUSPENSION OF CONTRACTORS FOR MATERIAL BREACH OF CITY CONTRACTS

The City may temporarily or permanently suspend contractors from doing business with the City whenever a contractor materially breaches its contract with the City. Any Proposal submitted by a Proposer, its proposed subcontractors or

subconsultants who are included on the City's Suspension List shall not be considered for review.

In addition, the principles of any Proposers or its proposed subcontractors or sub consultants shall not attempt to do business with the City under a different name or form a new legal entity in order to do business with the City while the principals of the Proposer or its proposed subcontractors or sub consultants remain on the Suspension List. In the event there is any intentional misrepresentation, the Proposer further understands and accepts that any contract issued as a result of this Invitation for Proposal shall be subject to immediate termination for default and suspension procedures by the City. The City, in the event of such termination, shall not incur any liability to the Proposer for any goods, services or materials furnished.

POINTS OF CONTACT/ TIMETABLE FOR INQUIRES

Proposers shall contact the Purchasing Director, or designee, for all inquiries related to this RFP. All Proposers' technical inquires shall be confirmed in writing either through the mail, via facsimile transmission or electronic mail.

Technical questions will not be entertained beyond the cut-off date indicated.

ORAL REPRESENTATION

No oral representation made by any City staff or official shall be binding on the City. The contents of this Request for Proposal and any subsequent addenda issued by the City shall govern all aspects of this Request for Proposal.

ADDENDA

If any revisions to the Request for Proposal become necessary (other than changes to the deadline for Proposal submission), the City will notify all registered Proposers requesting the corresponding document at least three (3) calendar days before the date scheduled for opening the Proposals. The City may revise the deadline for Proposal submission at any time prior to the date and time scheduled for opening the Proposals. **It is the responsibility of all Proposers to ascertain whether any addenda have been issued before the** Request **for Proposal deadline by either calling or checking with the City's Purchasing Director.**

CANCELLATION OF THE REQUEST FOR PROPOSAL

The City reserves the right to cancel this Request for Proposal and/or re-advertise and re-solicit the requirements at any time when determined to be in the best interest of the City.

DEVELOPMENT COSTS

Neither the City nor its representatives shall be liable for any expenses incurred by any Person in connection with the preparation, submission or presentation of a Proposal in response to this Request for Proposal. The Proposal and the information in the Proposal shall be provided at no cost to the City.

TAX EXEMPT STATUS

The City is exempt from Florida Sales and Federal Excise taxes on direct purchase of tangible property.

PROPOSAL SUBMISSION AND OPENING

All Proposals shall be submitted in sealed envelopes by the deadline indicated on the Request for Proposal. The City assumes no responsibility for Proposals not properly labeled.

The City will not accept Proposals delivered after the established deadline. If the Proposal is delivered after the established deadline, a Proposer shall be deemed non-responsive to the Request for Proposal requirements.

Receipt of a Proposal by any City office, receptionist or personal other than the Clerk's Office will not constitute "delivery" as required by this Request for Proposal. The City will not accept or consider Proposals submitted via facsimile transmission. The public is welcome to attend the Proposal opening.

ASSIGNMENT OF PROPOSALS

A Proposer shall not transfer or assign its Proposal to a third party following submission of a Proposal to the City.

WITHDRAWAL OF PROPOSAL

A Proposer may withdraw their submitted Proposal by notifying the City in writing through an authorized representative at any time prior to the opening/submittal deadline. Individuals making the withdrawal shall provide evidence of serving as an authorized representative of the

Proposer. Proposals, once received, become the property of the City, and will not be returned to Proposers even when they are withdrawn from consideration.

Proposals, once opened, shall not be withdrawn or modified except to the extent agreed to by the City during subsequent contract negotiation.

PUBLIC RECORDS AND EXEMPTIONS

Upon receipt, Proposals become "public records" and shall be subject to public disclosure consistent with Chapter 119, Florida Statutes. Proposers shall invoke the exemptions to disclosure provided by law, in the Proposal, by providing the specific statutory authority for the claimed exemption, identifying the data or other materials to be protected and stating the reasons why such exclusion from public disclosure is necessary.

REJECTION OF PROPOSALS

The City reserves the right to reject any and all Proposals for reasons including, but not limited to, the following: (1) when such rejection is in the interests of the City; (2) if such Proposal is deemed non-responsive; (3) if the Proposer is deemed non-responsible; or (4) if the Proposal contains any materials irregularities. Minor irregularities contained in a Proposal may be waived by the City. A minor irregularity is a variation from the Request for Proposal that does not affect the price of the contract nor does it give a Proposer an advantage or benefit not enjoyed by other Proposers and does not adversely impact the City.

CONE OF SILENCE / CONFLICT OF INTEREST AND CODE OF ETHICS

This Request for Proposal is issued pursuant to the City of Hialeah Code of Ordinances, which prohibits certain types of communications. After the advertisement of this Request for Proposal, all communications concerning this Request for Proposal should be directed to the City's Director of the Purchasing Department. Potential Proposers and their agents and employees shall not contact the Mayor, any member of the City Council, or any member of the City staff, except the Director of Purchasing, to discuss this Request for Proposal. Notwithstanding any other provision of this section, the imposition of a cone of silence on this Request for Proposal shall not preclude purchasing staff from obtaining industry comment or performing market research provided all communications related thereto with a potential offerer, service provider, Proposer, lobbyist, or consultant are in writing or are made at a duly noticed public meeting.

This Section does not apply to oral communications at pre-Proposal conferences, oral presentations before selection committees, contract negotiations, and public presentations made to the City Council during any duly noticed public meeting. A copy of all written communications must be filed with the City Clerk.

BUSINESS ENTITY REGISTRATION

The City of Hialeah requires business entities to complete and file a registration application before doing business with the City. Proposers need not register with the City to present a Proposal; however, the selected Proposer(s) must register prior to award of a contract because the failure to register may result in the rejection of the Proposal. To register, contact the Purchasing Department at (305) 883-5865. It is the responsibility of the business entity to update and renew its application concerning any changes, such as new address, telephone number, etc. during the performance of any agreement obtained as a result of this Invitation for Proposal.

SEALED PROPOSALS

The original copies of the Proposal Forms, as well as any other pertinent documents, must be returned to the City in order for the Proposal to be considered for award. All Proposals are subject to the conditions specified herein and on the attached Special Conditions, Specifications and Proposal Forms.

The completed Proposal must be submitted in sealed envelopes clearly marked with the Proposal title to the Office of the City Clerk of the City of Hialeah, 3rd floor, 501 Palm Avenue, Hialeah, Florida 33010 on the date and time due as indicated.

EXECUTION OF PROPOSAL

The Proposal must contain a manual signature of an authorized representative in the space provided on the Proposal Form. Failure to properly sign the Proposal shall invalidate same and it shall NOT be considered for award. All Proposals must be completed in pen or be

typewritten. No erasures are permitted. If a correction is necessary, draw a single line through the entered figure and enter the corrected figure above it. Corrections must be dated and initialed by the person signing the Proposal. Any illegible entries, pencil Proposals or corrections not initialed will not be tabulated. The original Proposal conditions and specifications CANNOT be changed or altered in any way after being submitted to the City.

PAYMENT

The City of Hialeah complies with Florida Statue 218.70, Florida Prompt Payment Act. Prompt payment is made within forty-five (45) days of date on which proper invoicing is received for goods and services and thirty (30) business days for construction services.

LEGAL REQUIREMENTS

Federal, State, County and City laws, ordinances, rules and regulations that in any manner affect the items covered herein apply. Lack of knowledge by the Proposer will in no way be a cause for relief from responsibility.

The individual executing this Proposal on behalf of the Company warrants to the City that the Company is a Florida corporation duly constituted and authorized to do business in the State of Florida, is in good standing and that Company possesses all of the required licenses and certificates of competency required by the State of Florida and the County of Miami-Dade to provide the goods or perform the services herein described.

PROPOSAL OPENING

Proposals shall be opened and publicly read in the Council Chambers, 3rd floor, 501 Palm Avenue, Hialeah, Florida 33010 on the date and at the time specified on this Solicitation.

DISPUTES

In case of any doubt or difference of opinion as to the services to be furnished hereunder, the decision of the City shall be final and binding on both parties. Any proposal protest shall be handled pursuant to Section 2-815.1 of the City Code.

PATENTS & ROYALTIES

The Proposer, without exception, shall indemnify and save harmless the City of Hialeah, Florida and its employees from liability of any nature or kind, including cost and expenses for, or on account of, any copyrighted, patented, or unpatented invention, process, or article manufactured or used in the performance of the contract, including its use by the City. If the Proposer uses any design, device or materials covered by letters, patent, or copyright, it is mutually understood and agreed, without exception, that the Proposal prices shall include all royalties or cost arising from the use of such design, device, or materials in any way involved in providing the required goods or services.

OSHA

The Proposer warrants that the product and services supplied to the City shall conform in all respects to the standards set forth in the Occupational Safety and Health Act of 1970, as amended, and the failure to comply with this condition will be considered as a breach of contract. Any fines levied because of inadequacies to comply with these requirements shall be borne solely by the Proposer responsible for same.

SPECIAL CONDITIONS

Any Special Conditions that vary from these General Conditions shall have precedence.

ANTI-DISCRIMINATION

The Proposer certifies compliance with the non-discrimination clause contained in Section 202, Executive Order 11246, as amended by Executive Order 11375, relative to equal employment opportunity for all persons without regard to race, color, religion, sex or national origin.

INSURANCE/PERMIT

Proposers are required to assume the full duty, obligation and expense of obtaining all necessary licenses, permits and insurance and assure all work complies with all Miami-Dade County and City of Hialeah building requirements and the South Florida Building Code. The Proposer shall be liable for any damages or loss to the City occasioned by negligence of the Proposer (or agent) or any person the Proposer has designated in the completion of the contract as a result of the Proposal.

PROPOSAL BONDS, PERFORMANCE BONDS, CERTIFICATES OF INSURANCE

Proposal Bonds, when required, shall be submitted with the Proposal in the amount specified in Special Conditions. After acceptance of Proposal, the City will notify the successful Proposer to submit a performance bond and certificate of insurance in the amount specified in Special Conditions.

PROPOSAL TABULATIONS

Proposers desiring a copy of the Proposal tabulation may request same by enclosing a self-addressed stamped envelope with the Proposal.

APPLICABLE LAW AND VENUE

The law of the State of Florida shall govern this RFP and the contract between the City of Hialeah and the successful Proposer. Any action concerning this RFP or the Agreement shall be brought exclusively in the state or federal courts in and for Miami-Dade County, Florida.

CLARIFICATION AND ADDENDA TO PROPOSAL SPECIFICATIONS

If any person contemplating submitting a Proposal under this Request for Proposal is in doubt as to the true meaning of the specifications or other Proposal documents or any part thereof, the Proposer must submit a request for clarification to the City of Hialeah Purchasing Director. All such requests for clarification must be made in writing and the person submitting the request will be responsible for its timely delivery.

Any interpretation of the Proposal, if made, will be made only by Addendum duly issued by the City of Hialeah Purchasing Director. The City shall issue an Informational Addendum if clarification or minimal changes are required. The City shall issue a Formal Addendum if substantial changes which impact the technical submission of Proposals are required. A copy of such Addendum will be emailed to each Proposer receiving the Invitation for Proposal. In the event of a conflict with the original Agreement, the Addendum shall govern all other Contract Documents to the extent specified. Subsequent addendum shall govern over prior addendum only to the extent specified.

AWARD OF CONTRACT

A. A contract may be awarded to the responsive, responsible Proposer who's Proposal, conforming to the Request for Proposal, is most advantageous to the City of Hialeah. The best responsive, responsible Proposer(s) will be determined in conjunction with the method of award which is described in the Special Conditions.

B. The City shall award a contract to a Proposer only through action taken by the City Council.

C. While the City may determine to award a contract to a Proposer(s) under this Request for Proposal, said Award may be conditional on the subsequent submission of other documents as specified in the Special Conditions. The Proposer shall be in default of any conditional award if any of these documents are not submitted in a timely manner and in the form required by the City. If the Proposer is in default, the City, through the Purchasing Director, will void its acceptance of the Proposer's offer and may determine to select the second most responsive, responsible Proposer or re-solicit Proposals. The City may, at its sole option, seek monetary restitution from the defaulting Proposer as a result of damages or excess costs sustained and/or may prohibit the Proposer from submitting future Proposals for a period of one year.

D. The City reserves the right to exercise the option to renew a term contract of any successful Proposer(s) to a subsequent optional period; provided that such option is stipulated in the contract ultimately awarded in regard to this Proposal.

E. The City reserves the right to automatically extend any contract for a maximum period not to exceed ninety (90) calendar days in order to provide City departments with continual service and supplies while a new contract is being solicited, evaluated and/or awarded, provided this is expressly made a part of any contract awarded in regard to this Proposal.

ASSIGNMENT

The Proposer shall not assign, transfer, convey, or otherwise dispose of any contract, including any or all of its right, title, or interest therein, or its

power to execute such contract to any person, company or corporation without prior written consent of the City.

LAWS, PERMITS AND REGULATIONS

The Proposer shall obtain and pay all licenses, permits and inspection fees as may be required by the Agreement and this RFP. The Proposer shall comply with all laws, ordinances, regulations, building code requirements applicable to the goods or services contemplated herein.

OPTIONAL CONTRACT USAGE

Other State agencies, and/or Governmental Entities in the State of Florida may purchase from the resulting contract, provided the City, has certified its use to be cost effective and in the best interest of the City.

SPOT MARKET PURCHASES

It is the intent of the City to purchase the goods or services specifically listed in this Proposal from the selected Proposer. However, items that are to be "Spot Market Purchased" may be purchased by other methods, i.e. Federal, State or local contracts.

INCENTIVES/DISINCENTIVES

The City has EXCLUDED incentive/disincentive for early completion provisions in the contract. Liquidated damages may apply for untimely delivery of goods or services.

NON-COLLUSION

By submitting this Proposal, Proposer certifies that this offer is made without prior understanding, agreement, or connection with any corporation, firm or person submitting an offer for the same materials, services, supplies, or equipment and is in all respects fair and without collusion or fraud.

No premiums, rebates or gratuities are permitted, either with, prior to or after any delivery of material or provision of services. Any violation of this provision may result in the Contract cancellation, return of materials or discontinuation of services and the possible removal from the vendor Proposal list(s).

FLORIDA PUBLIC RECORDS ACT

All material submitted regarding this Proposal becomes the property of the City. Proposals may be reviewed by any Person ten (10) days after the public opening. Proposers should take special note of this as it relates to any proprietary information that might be included in their offer.

Any resulting contract may be reviewed by any Person after the contract has been executed by the City. The City has the right to use any or all information/material submitted in response to this Proposal and/or any resulting contract from same. Disqualification of a Proposer does not eliminate this right.

STANDARDIZED CHANGES

Contract documents shall be modified, if necessary, to reflect the requirements of 23 CFR 635.109. The changed conditions contract clauses shall be made part of, and incorporated in this project which has been approved under 23 U.S.C. 106.